February 8, 2002

Re: **08/754,182 (US 5,912,541)**

Dear Examiner Foster,

Attached are the requested litigation search results.

Several patent litigation and news databases were searched using Dialog, Lexis-Nexis, Questel-Orbit and US Courts Pacer search systems.

Litigation was found:
Intel Corp. v. Broadcom Corp.,
173 F. Supp. 201 (D.C. Del. 2001). (and related written decisions, No. 00-CV-796, pending)

Broadcom Corp. v. Intel Corp.,
No. 00-CV-3702, No. 00-CV-21206 (D. C. N. D. Cal filed Oct. 6, 2000).

Docket information is attached.

Thank you for using EIC2800!

Derrick Blalock
306-0935
CP4-9C18

Enter Search Terms

Terms and Connectors | Natural Language

5,894,410 OR 5894410 Search

Use connectors to show relation of terms (cat **or** feline, jane **w/3** doe) more...

Suggest Words and Concepts for Entered Terms

Restrict Search Using Document Segments

Optional: Restrict by Date

No Date Restrictions | From | To

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Source: All Sources > Area of Law - By Topic > Patent Law > Multi-Source Groups > **Patent Cases from Federal Courts and Administrative Materials**
Terms: **5,894,410 or 5894410** (Edit Search)

Select for FOCUS™ or Delivery

1. Intel Corp. v. Broadcom Corp., Civil Action No. 00-796-RRM, UNITED STATES DISTRICT COURT FOR THE DISTRICT OF DELAWARE, 173 F. Supp. 2d 201; 2001 U.S. Dist. LEXIS 18936, November 20, 2001, Decided

 OVERVIEW: Patent holder was granted partial summary judgment on its patent infringement claims for two hardware and software technology patents as those patents were excluded from the coverage of a joint development agreement between the parties.

 CORE TERMS: patent, license, licensee, licensed, summary judgment, patent license, third party, infringing, unlicensed, foundry...

2. Intel Corp. v. Broadcom Corp., Civil Action No. 00-796-RRM, UNITED STATES DISTRICT COURT FOR THE DISTRICT OF DELAWARE, 172 F. Supp. 2d 478; 2001 U.S. Dist. LEXIS 18422, November 6, 2001, Decided

 OVERVIEW: Prior to trial in a patent infringement action, the disputed claims in one patent were construed by the court following a Markman hearing.

 CORE TERMS: node, format, destination, specification, patent, bit, network, medium, string, default...

3. INTEL CORP. v. BROADCOM CORP., Civil Action No. 00-796-RRM, UNITED STATES DISTRICT COURT FOR THE DISTRICT OF DELAWARE, 172 F. Supp. 2d 516; 2001 U.S. Dist. LEXIS 18485, November 6, 2001, Decided

 OVERVIEW: A computer chip maker sued another for patent infringement related to techniques for digital data compression, i.e., encoding, and decompression, i.e., decoding. The court's opinion considered two asserted claims of a patent at issue.

 CORE TERMS: pixel, video, arithmetic, specification, circuitry, signal, statistical, patent, corresponding, output...

4. In the Matter of CERTAIN INTEGRATED REPEATERS, SWITCHES, TRANSCEIVERS, AND PRODUCTS CONTAINING SAME, Inv. No. 337-TA-435, 2000 ITC LEXIS 242, UNITED STATES INTERNATIONAL TRADE COMMISSION, August 17, 2000

 CORE TERMS: notice, importation, Tariff Act, administrative law, instituted, infringement, transceivers, integrated, repeaters, switches...

Source: All Sources > Area of Law - By Topic > Patent Law > Multi-Source Groups > **Patent Cases from Federal Courts and Administrative Materials**
Terms: **5,894,410 or 5894410** (Edit Search)
View: Cite
Date/Time: Friday, February 8, 2002 - 9:57 AM EST

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Enter Search Terms

Terms and Connectors | Natural Language

PATNO IS 5,894,410 OR 5894410 Search

Use connectors to show relation of terms (cat or feline, jane w/3 doe) more...

Suggest Words and Concepts for Entered Terms

Restrict Search Using Document Segments

Optional: Restrict by Date

No Date Restrictions | From ____ To ____

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*Pat. No. 5894410, **

5,894,410

◆ GET 1st DRAWING SHEET OF 1

Apr. 13, 1999

Perimeter matrix ball grid array circuit package with a populated center

LIT-REEX:
NOTICE OF LITIGATION

Broadcom Corporation v. Intel Corporation, Filed Oct. 10, 2000, D.C. N.D. California (San Francisco), Doc. No. CV-00-3702 PJH

NOTICE OF LITIGATION

Intel Corporation v. Broadcom Corporation, Filed Aug. 30, 2000, D.C. Delaware, Doc. No. CA 00-796

INVENTOR: Barrow, Michael, El Dorado Hills, California

ASSIGNEE-AT-ISSUE: Intel Corporation, Santa Clara, California (02)

APPL-NO: 959,546

FILED: Oct. 24, 1997

CERTCORR: Oct. 26, 1999 a Certificate of Correction was issued for this patent

REL-US-DATA:
Continuation of Ser. No. 08/623,355, Mar. 28, 1996

INT-CL: [6] H05K 01#011

US-CL: 361#760; 361#772; 361#777; 361#783; 361#820; 257#778; 257#724; 257#730; 257#780

CL: 361;257

SEARCH-FLD: 361#760, 704, 707, 719, 720, 221; 257#700, 747, 778, 787, 723, 724; 228#180.21, 180.22

REF-CITED:

U.S. PATENT DOCUMENTS

5,216,278	6/1993	*	Lin et al.	257#688
5,285,352	2/1994	*	Pastore et al.	361#707
5,355,283	10/1994	*	Marrs et al.	361#760
5,450,283	9/1995	*	Lin et al.	361#704
5,490,324	2/1996	*	Newman	29#830

PRIM-EXMR: Picard, Leo P.

ASST-EXMR: Foster, David

LEGAL-REP: Blakely Sokoloff Taylor & Zafman

CORE TERMS: package, array, pad, integrated, ball, substrate, solder, recited, separated, thermal, grid, external, dimensional, profile, coupled, printed circuit, bond, bus, stresses, two-dimensional, path, exposed, differential, rows, located outside, coefficient, reflowed, routing, matrix, electrically

ABST:
A ball grid array (BGA) integrated circuit package which has an outer two-dimensional array of solder balls and a center two-dimensional array of solder balls located on a bottom surface of a package substrate. The solder balls are typically reflowed to mount the package to a printed circuit board. Mounted to an opposite surface of the substrate is an integrated circuit that is electrically coupled to the solder balls by internal routing within the package. The outer array of solder balls are located the dimensional profile of the integrated circuit to reduce solder stresses induced by the differential thermal expansion between the integrated circuit and the substrate. The center solder balls are typically routed directly to ground and power pads of the package to provide a direct thermal and electrical path from the integrated circuit to the printed circuit board.

NO-OF-CLAIMS: 29

EXMPL-CLAIM: 1

NO-OF-FIGURES: 5

NO-DRWNG-PP: 1

PARCASE: This is a Continuation Application of application Ser. No. 08/623,355, filed Mar. 28, 1996.

SUM:

BACKGROUND OF THE INVENTION

1. Field of the Invention

The present invention relates to an integrated circuit package.

2. Description of Related Art

Integrated circuits are typically mounted to a package that is soldered to a printed circuit board. One such type of integrated circuit package is a ball grid array ("BGA") package. BGA packages have a plurality of solder balls located on a bottom external surface of a package substrate. The solder balls are reflowed to attach the package to the printed circuit board. The integrated circuit is mounted to a top surface of the package substrate, and electrically coupled to the solder balls by internal routing within the package.

FIG. 1 shows a solder ball array of a prior art BGA package 2. The solder balls 4 are arranged in a two-dimensional pattern across the bottom surface of the package. The integrated circuit 6 is centrally located on the opposite side of the package 2. The package 2 is typically constructed from a material which has a coefficient of thermal expansion that is different than the thermal expansion coefficient of the integrated circuit. It has been found that the differential thermal expansion between the integrated circuit and the package will induce temperature related stresses that fail solder joints in an area which corresponds to the outer edges of the circuit die.

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  Selected file: PLUSPAT


?NBR /PN US5894410


   1         1  US5894407
   2         1  US5894408
   3         1  US5894409
   4         1  US589441
   5         1  US5894410
   6         1  US5894411
   7         1  US5894412
   8         1  US5894413
   9         1  US5894414
  10         1  US5894415
  11         1  US5894416
  12         1  US5894417
  13         1  US5894418
  14         1  US5894419
  15         1  US589442
  Some: numbers / Continue: Y / None: N

?S 5


  ** SS 1: Results 1
  Continue: Y / N

?PRT FULL LEGALALL MAX
```

1/1 LGST - (C) LEGSTAT
PN - US 5894410 [US5894410]
AP - US 959546/97 19971024 [1997US-0959546]
DT - US-P
ACT - 19971024 US/AE-A
APPLICATION DATA (PATENT)
{US 959546/97 19971024 [1997US-0959546]}
- 19990413 US/A
PATENT
- 19991026 US/CC
CERTIFICATE OF CORRECTION
UP - 1999-44

1/1 CRXX - (C) CLAIMS/RRX
AN - 3136659
PN - 5,894,410 A 19990413 [US5894410]
PA - Intel Corp
PT - E (Electrical)
ACT - 19991026 CERTIFICATE OF CORRECTION

UP - 1999-42
UCOR- 1999-10-26

1/2 PAST - (C) PAST
AN - 200046-001257
PN - 5894410 A [US5894410]
DT - A (UTILITY)
CO - PS
ACT - PATENT SUIT
NO - LITALERT

2/2 PAST - (C) PAST
AN - 199943-000144
PN - 5894410 A [US5894410]
DT - A (UTILITY)
OG - 1999-10-26
CO - COR
ACT - CERTIFICATE OF CORRECTION
SH - CERTIFICATE OF CORRECTION

1/2 LITA - (C) LITALERT
AN - P2000-46-06
FS - PATENT (P)
PN - US5894410 19990413 (Utility)
TI - Perimeter matrix ball grid array circuit package with a populated center
PCL - 361760000
IN - Barrow Michael - El Dorado Hills CA
PA - Intel Corporation - Santa Clara CA
IT - Active solid-state devices (e.g., transistors, solid-state diodes)
PF - Broadcom Corporation
DF - Intel Corporation
CT - CA, Northern Dist.
DN - CV-00-3702 PJH
FD - 2000-10-10

ACT - A complaint was filed.
OPN - US4975830
- US5134478
- US4823201
- US5079630
UP - 2000-46

2/2 LITA - (C) LITALERT
AN - P2000-38-20
FS - PATENT (P)
PN - US4975830 19901204 (Utility)
TI - Computer communication system having supplemental formats
PCL - 709228000
IN - Gerpheide George E - Salt Lake City UT;
- Sharp Kerry D- Riverton UT;
- Lee Daniel J - Salt Lake City UT;
- Olsen David C - Kaysville UT;
- Meyer David B - Salt Lake City UT;
- Kohagen Mark E - Salt Lake City IT
PA - Dayna Communications Incorporated - Salt Lake City UT
IT - Electrical computers & data processing systems
PF - Intel Corporation
DF - Broadcom Corporation
CT - DE
DN - CA 00-796
FD - 2000-08-30
ACT - A complaint was filed.
OPN - US5894410
- US5134478
- US5079630
- US4823201
UP - 2000-38

U.S. District Court

U. S. District Court of Delaware (Wilmington)

CIVIL DOCKET FOR CASE #: 00-CV-796

Intel Corporation v. Broadcom Corporation

Filed: 08/30/00
Assigned to: Judge Sue L. Robinson
Jury demand: Plaintiff
Demand: $0,000
Nature of Suit: 830
Lead Docket: None
Jurisdiction: Federal Question
Dkt# in other court: None
Cause: 35:271 Patent Infringement

INTEL CORPORATION plaintiff	William J. Marsden, Jr. [COR LD NTC] J. Andrew Huffman [term 01/14/02] [COR LD NTC] Fish & Richardson, P.C. 919 N. Market Street, Suite 1100 P.O. Box 1114 Wilmington, DE 19899-1114 (302) 652-5070
v.	
BROADCOM CORPORATION defendant	Richard H. Morse 571-6651 [COR LD NTC] Young, Conaway, Stargatt & Taylor The Brandywine Building 1000 West Street, 17th Floor P.O. Box 391 Wilmington, DE 19899-0391 (302) 571-6600
CABLEVISION SYSTEMS CORPORATION movant [term 08/03/01]	Julia Heaney [term 08/03/01] [COR LD NTC] Morris, Nichols, Arsht & Tunnell 1201 North Market Street P.O. Box 1347 Wilmington, DE 19899 (302) 658-9200

COMCAST CABLE COMMUNICATIONS, INC. movant	Gregory V. Varallo [COR LD NTC] Richards, Layton & Finger One Rodney Square P.O. Box 551 Wilmington, DE 19899 (302) 658-6541
BROADCOM CORPORATION counter-claimant	Richard H. Morse 571-6651 [COR LD NTC] Young, Conaway, Stargatt & Taylor The Brandywine Building 1000 West Street, 17th Floor P.O. Box 391 Wilmington, DE 19899-0391 (302) 571-6600
v. INTEL CORPORATION counter-defendant	William J. Marsden, Jr. J. Andrew Huffman [term 01/14/02] [COR LD NTC] Fish & Richardson, P.C. 919 N. Market Street, Suite 1100 P.O. Box 1114 Wilmington, DE 19899-1114 (302) 652-5070

DOCKET PROCEEDINGS

DATE	#	DOCKET ENTRY
8/30/00	1	COMPLAINT filed; Mag consent notice to pltf. FILING FEE $ 150.00 RECEIPT # 129258 (kc)
8/30/00	--	DEMAND for jury trial by Intel Corporation (kc)
8/30/00	--	SUMMONS(ES) issued for Broadcom Corporation (kc)
8/30/00	2	Report to Commissioner of Patents and Trademarks. Exit original. RE: 4,975,830, 5,894,410, 5,134,478, 5,079,630, and 4,823,201 (kc)
8/31/00	3	RETURN OF SERVICE executed as to Broadcom Corporation 8/30/00 Answer due on 9/19/00 for Broadcom Corporation (kc)
9/6/00	4	CASE assigned to Judge Roderick R. McKelvie . Notice to all parties. (nl)
9/18/00	5	Affidavit of J. Andrew Huffman; RETURN OF SERVICE executed as to Broadcom Corporation 9/5/00 Answer due on 9/25/00 for Broadcom Corporation (nl) [Entry date 09/19/00]

9/21/00	6	STIPULATION with proposed order extending time for dft to respond to complaint by 10/9/00. (nl) [Entry date 09/22/00]
9/25/00	--	So Ordered granting [6-1] stipulation (signed by Judge Roderick R. McKelvie) Notice to all parties. (nl)
9/25/00	--	Deadline updated; reset Answer deadline to 10/9/00 for Broadcom Corporation (nl)
9/25/00	7	NOTICE of change of address of counsel for Intel Corporation (nl) [Entry date 09/26/00]
10/10/00	8	MOTION by Broadcom Corporation to Dismiss, or, in the alternative to Transfer Venue Answer Brief due 10/24/00 re: [8-1] motion, Answer Brief due 10/24/00 re: [8-2] motion (nl)
10/10/00	9	Opening Brief Filed by Broadcom Corporation [8-1] motion to Dismiss, [8-2] motion to Transfer Venue (nl)
10/10/00	10	Appendix to Brief Filed by Broadcom Corporation Appending [9-1] opening brief (nl)
10/10/00	11	Declaration of Aurelio E. Fernandez in support of D.I. 8. (nl)
10/10/00	12	Declaration of Greg Provenzano in support of D.I. 8. (nl)
10/10/00	13	Declaration of Rodney G. Strickland, Jr. in support of D.I. 8. (nl)
10/10/00	14	Declaration of Phil Brant in support of D.I. 8. (nl)
10/20/00	15	MOTION by Broadcom Corporation with Proposed Order for Josh Goldfoot, Esq. to Appear Pro Hac Vice (nl) [Entry date 10/23/00]
10/20/00	16	MOTION by Broadcom Corporation with Proposed Order for Ron E. Shulman, Esq. to Appear Pro Hac Vice (nl) [Entry date 10/23/00]
10/20/00	17	MOTION by Broadcom Corporation with Proposed Order for Michael A. Ladra, Esq. to Appear Pro Hac Vice (nl) [Entry date 10/23/00]
10/20/00	18	MOTION by Broadcom Corporation with Proposed Order for Vera Elson, Esq. to Appear Pro Hac Vice (nl) [Entry date 10/23/00]
10/20/00	19	MOTION by Broadcom Corporation with Proposed Order for Keaton Parekh, Esq. to Appear Pro Hac Vice (nl) [Entry date 10/23/00]
10/23/00	--	So Ordered granting [15-1] motion for Josh Goldfoot, Esq. to Appear Pro Hac Vice granting [16-1] motion for Ron E. Shulman, Esq. to Appear Pro Hac Vice granting [17-1] motion for Michael A. Ladra, Esq. to Appear Pro Hac Vice granting [18-1] motion for Vera Elson, Esq. to Appear Pro Hac Vice granting [19-1] motion for Keaton Parekh, Esq. to Appear Pro Hac Vice (signed by Judge Roderick R. McKelvie) Notice to all parties. (nl)
10/23/00	--	Tele-conference held; rprtr. K. Maurer (nl)
10/24/00	20	Letter from Judge McKelvie to counsel encl. draft proposed

		scheduling order and protective order. (nl) [Entry date 10/25/00]
10/26/00	21	MOTION by Intel Corporation with Proposed Order for John E. Gartman, Esq. to Appear Pro Hac Vice (nl)
10/26/00	22	MOTION by Intel Corporation with Proposed Order for Juanita R. Brooks, Esq. to Appear Pro Hac Vice (nl)
10/30/00	--	So Ordered granting [21-1] motion for John E. Gartman, Esq. to Appear Pro Hac Vice granting [22-1] motion for Juanita R. Brooks, Esq. to Appear Pro Hac Vice (signed by Judge Roderick R. McKelvie) Notice to all parties. (nl)
10/31/00	23	CERTIFICATE OF SERVICE by Broadcom Corporation re 1st set of document requests to Intel. (nl) [Entry date 11/01/00]
10/31/00	24	NOTICE by Broadcom Corporation to take deposition of Intel Corporation on 11/9/00 (nl) [Entry date 11/01/00]
11/1/00	25	NOTICE by Broadcom Corporation to take deposition of Intel Corporation on 11/15/00 (nl) [Entry date 11/02/00]
11/2/00	26	CERTIFICATE OF SERVICE by Intel Corporation re 1st request for inspection and production of docs. and things (nos. 1-77) to dft. (nl) [Entry date 11/03/00]
11/3/00	27	TRANSCRIPT filed [0-0] telephone conference for dates of 10/23/00 (nl) [Entry date 11/06/00]
11/7/00	28	CERTIFICATE OF SERVICE by Intel Corporation re 1st set of interrogs. nos. 1-4 to dft. (nl) [Entry date 11/08/00]
11/7/00	29	CERTIFICATE OF SERVICE by Intel Corporation re 2nd request for inspection and production of docs. and things nos. 78-208 to dft. (nl) [Entry date 11/08/00]
11/8/00	--	Tele-conference held; rprtr. V. Gunning (nl) [Entry date 11/09/00]
11/16/00	30	MOTION by Broadcom Corporation with Proposed Order for Keaton Parekh, Esq. to Appear Pro Hac Vice (nl) [Entry date 11/17/00]
11/16/00	31	CERTIFICATE OF SERVICE by Broadcom Corporation re 1st set of interrogs. to ptf, and 2nd set of document request to ptf. (nl) [Entry date 11/17/00]
11/20/00	--	So Ordered granting [30-1] motion for Keaton Parekh, Esq. to Appear Pro Hac Vice (signed by Judge Roderick R. McKelvie) Notice to all parties. (nl)
11/21/00	32	TRANSCRIPT filed [0-0] telephone conference for dates of 11/8/00 (nl)
11/22/00	33	MOTION by Broadcom Corporation with Proposed Order for April E. Abele, Esq. to Appear Pro Hac Vice (nl) [Entry date 11/27/00]
11/27/00	34	Steno Notes for 10/23/00; rprtr. K. Maurer (nl)
11/27/00	35	CERTIFICATE OF SERVICE by Broadcom Corporation re response to Intel's 1st request for prod. of docs. and things (nos. 1-77). (nl) [Entry date 11/28/00]

11/29/00	36	CERTIFICATE OF SERVICE re responses and objections of Comcast Cable Comm. to subpoena of Intel. (nl) [Entry date 11/30/00]
12/4/00	--	So Ordered granting [33-1] motion for April E. Abele, Esq. to Appear Pro Hac Vice (signed by Judge Roderick R. McKelvie) Notice to all parties. (nl)
12/6/00	37	CERTIFICATE OF SERVICE by Broadcom Corporation re responses to Intel's 1st set of interrogs. nos. 1-4, and response to Intel's 2nd request for prod. of docs. and things (nos. 78-209). (nl) [Entry date 12/07/00]
12/8/00	38	Proposed Discovery Plan filed by Intel Corporation, Broadcom Corporation (nl)
12/11/00	39	Letter from J. Andrew Huffman, Esq. to Judge McKelvie encl. agreed form of scheduling order. (nl) [Entry date 12/12/00]
12/12/00	40	CERTIFICATE OF SERVICE by Intel Corporation re response to Broadcom's 1st set of document requests (requests 1-239). (nl)
12/12/00	41	CERTIFICATE OF SERVICE by Intel Corporation re initial disclosures. (nl)
12/13/00	42	CERTIFICATE OF SERVICE by Broadcom Corporation re initial disclosures. (nl) [Entry date 12/14/00]
12/15/00	43	Subpoena for Scientific-Atlanta, Inc. (nl)
12/15/00	44	Subpoena for Compaq Computer Corporation (nl)
12/15/00	45	Subpoena for Motorola, Inc. (nl)
12/15/00	46	Subpoena for Toshiba America Information Systems, Inc. (nl)
12/15/00	47	Subpoena for 3COM Corporation (nl)
12/15/00	48	Subpoena for Hewlett-Packard Company (nl)
12/15/00	49	Subpoena for Thomson Consumer Electronics, Inc. (nl)
12/18/00	50	CERTIFICATE OF SERVICE by Broadcom Corporation re amended initial disclosures. (nl) [Entry date 12/19/00]
12/19/00	51	Letter from J. Andrew Huffman, Esq. to Judge McKelvie re discovery disputes {attachment SEALED}. (nl) [Entry date 12/20/00]
12/20/00	--	Tele-conference held; rprtr. V. Gunning (nl) [Entry date 12/21/00]
12/21/00	52	Letter from Richard Morse, Esq. to Judge McKelvie encl. documents which may be referred to during 12/21/00 teleconference. (nl)
12/21/00	53	Letter from Intel Corporation to Judge McKelvie dated 12/21/00 {SEALED}. (nl)
12/21/00	--	Tele-conference held; rprtr. V. Gunning (nl)
1/2/01	54	CERTIFICATE OF SERVICE by Intel Corporation re response to dft's 1st set of interrogs. (nl) [Entry date 01/03/01]

1/2/01	55	CERTIFICATE OF SERVICE by Intel Corporation re response to 2nd set of document requests (request 1). (nl) [Entry date 01/03/01]
1/3/01	56	TRANSCRIPT filed [0-0] telephone conference for dates of 12/21/00 (nl)
1/3/01	57	TRANSCRIPT filed [0-0] telephone conference for dates of 12/20/00 (nl)
1/3/01	58	Subpoena for CISCO Systems, Inc. (nl) [Entry date 01/04/01]
1/3/01	59	Subpoena for ARRIS Interactive, L.L.C. (nl) [Entry date 01/04/01]
1/3/01	60	Subpoena for Samsung Telecommunications America, Inc. (nl) [Entry date 01/04/01]
1/4/01	--	Tele-conference held; rprtr. V. Gunning (nl) [Entry date 01/05/01]
1/4/01	61	Subpoena for Allegro Systems, Inc. (nl) [Entry date 01/05/01]
1/5/01	62	TRANSCRIPT filed [0-0] telephone conference for dates of 1/4/01 (nl)
1/8/01	63	Letter brief from William Marsden, Esq. to Judge McKelvie re Intel's submission on discovery disputes. (nl) [Entry date 01/09/01]
1/8/01	64	Letter from Richard Morse, Esq. to Judge McKelvie encl. letter from Vera Elson, Esq. to Judge McKelvie re dft Broadcom's submission on discovery disputes. (nl) [Entry date 01/09/01]
1/9/01	--	Tele-conference held; rprtr. K. Maurer (nl) [Entry date 01/10/01]
1/11/01	65	Steno Notes for 1/9/01; rprtr. K. Maurer (nl)
1/16/01	66	TRANSCRIPT filed [0-0] telephone conference for dates of 1/9/01 (nl)
1/17/01	--	Tele-conference held; rprtr. V. Gunning (nl) [Entry date 01/18/01]
1/17/01	67	TRIAL MANAGEMENT ORDER (signed by Judge Roderick R. McKelvie) copies to: cnsl. (nl) [Entry date 01/18/01]
1/17/01	68	SCHEDULING ORDER setting Status Report 5/2/01 Status Conference 4:30 5/9/01 Discovery cutoff 6/15/01 ; Deadline for filing dispositive motions 7/12/01 Pretrial conference for 10:00 9/13/01 ; Trial Date Deadline (10 day jury) 10:00 10/29/01 ; signed by Judge Roderick R. McKelvie) copies to: cnsl. (nl) [Entry date 01/18/01]
1/17/01	--	Deadline updated; set Markman Hearing for 11:00 9/13/01 (nl) [Entry date 01/18/01]
1/24/01	69	Letter from Intel Corp. to Judge McKelvie regarding telephone conference on 1/24/01 at 3:00 p.m. {SEALED}. (nl)
1/24/01	--	Tele-conference held; rprtr. K. Maurer (nl)

1/25/01	70	TRANSCRIPT filed [0-0] telephone conference for dates of 1/17/01 (nl)
1/29/01	71	NOTICE of subpoena to Broadband Services, Inc. by Intel Corporation (nl) [Entry date 01/30/01]
1/30/01	72	TRANSCRIPT filed [0-0] telephone conference for dates of 1/24/01 (nl)
1/30/01	73	Steno Notes for 1/24/01; rprtr. K. Maurer (nl)
1/30/01	--	Tele-conference held; rprtr. K. Maurer (nl) [Entry date 02/02/01]
1/31/01	74	Steno Notes for 1/30/01; rprtr. K. Maurer (nl)
2/1/01	75	STIPULATION and Protective Order with proposed order (nl)
2/2/01	--	So Ordered granting [75-1] stipulation and protective order (signed by Judge Roderick R. McKelvie) Notice to all parties. (nl)
2/6/01	76	TRANSCRIPT filed [0-0] telephone conference for dates of 1/30/01 (nl) [Entry date 02/07/01]
2/12/01	77	Subpoena for Verizon Communications (c/o Adam Bernstein) (nl) [Entry date 02/13/01]
2/12/01	78	Subpoena for Verizon Communications (nl) [Entry date 02/13/01]
3/8/01	79	NOTICE of subpoena for Autotote Corporation by Intel Corporation (nl) [Entry date 03/09/01]
3/8/01	80	CERTIFICATE OF SERVICE by Intel Corporation re notice of deposition of Broadcom. (nl) [Entry date 03/09/01]
3/14/01	81	MOTION by Broadcom Corporation with Proposed Order for Karen L. Jennings, Esq. to Appear Pro Hac Vice (nl) [Entry date 03/15/01]
3/14/01	82	MOTION by Broadcom Corporation with Proposed Order for Ariana M. Chung-Han, Esq. to Appear Pro Hac Vice (nl) [Entry date 03/15/01]
3/16/01	--	So Ordered granting [81-1] motion for Karen L. Jennings, Esq. to Appear Pro Hac Vice granting [82-1] motion for Ariana M. Chung-Han, Esq. to Appear Pro Hac Vice (signed by Judge Roderick R. McKelvie) Notice to all parties. (nl)
3/16/01	83	MOTION by Intel Corporation with Proposed Order for Christopher S. Marchese, Esq. to Appear Pro Hac Vice (nl)
3/16/01	84	MOTION by Intel Corporation with Proposed Order to Compel production of documents by Cisco Systems, Inc. Answer Brief due 3/30/01 re: [84-1] motion (nl) [Entry date 03/19/01]
3/16/01	85	Declaration of Todd G. Miller in support of D.I. 84. (nl) [Entry date 03/19/01]
3/16/01	86	MOTION by Intel Corporation with Proposed Order to Compel production of documents by Thomson Consumer Electronics, Inc. Answer Brief due 3/30/01 re: [86-1] motion (nl) [Entry date 03/19/01]

3/16/01	87	Declaration of Todd G. Miller in support of D.I. 86. (nl) [Entry date 03/19/01]
3/19/01	--	So Ordered granting [83-1] motion for Christopher S. Marchese, Esq. to Appear Pro Hac Vice (signed by Judge Roderick R. McKelvie) Notice to all parties. (nl) [Entry date 03/20/01]
3/20/01	88	MOTION by Broadcom Corporation with Proposed Order for Behrooz Shariati, Esq. to Appear Pro Hac Vice (nl)
3/20/01	89	MOTION by Broadcom Corporation with Proposed Order for Ralph M. Tsong, Esq. to Appear Pro Hac Vice (nl)
3/21/01	--	So Ordered granting [88-1] motion for Behrooz Shariati, Esq. to Appear Pro Hac Vice granting [89-1] motion for Ralph M. Tsong, Esq. to Appear Pro Hac Vice (signed by Judge Roderick R. McKelvie) Notice to all parties. (nl) [Entry date 03/22/01]
3/22/01	--	Tele-conference held; rprtr. V. Gunning (nl) [Entry date 03/23/01]
3/27/01	90	Corrected Notice of Subpoena for Motorola, Inc. (nl)
3/27/01	91	TRANSCRIPT filed [0-0] telephone conference for dates of 3/22/01 (nl)
3/27/01	92	MOTION by Intel Corporation with Proposed Order to Compel production of documents by Motorola, Inc. Answer Brief due 4/10/01 re: [92-1] motion (nl)
3/27/01	93	Declaration of Todd G. Miller in support of D.I. 92. (nl)
3/27/01	--	Tele-conference held; rprtr. K. Maurer (nl) [Entry date 03/28/01]
3/30/01	94	NOTICE of subpoena by Intel Corporation for Edwardo Fernandez (nl) [Entry date 04/02/01]
3/30/01	95	NOTICE by Intel Corporation to take deposition of Lee Leibig (nl) [Entry date 04/02/01]
3/30/01	96	NOTICE by Intel Corporation to take deposition of Scott Cunningham (nl) [Entry date 04/02/01]
3/30/01	97	NOTICE by Intel Corporation to take deposition of Hahn Nguyen (nl) [Entry date 04/02/01]
3/30/01	98	NOTICE by Intel Corporation to take deposition of Patrick Henderson (nl) [Entry date 04/02/01]
3/30/01	99	NOTICE by Intel Corporation to take deposition of Greg Nix (nl) [Entry date 04/02/01]
3/30/01	100	NOTICE by Intel Corporation to take deposition of Devesh Garg (nl) [Entry date 04/02/01]
3/30/01	101	NOTICE by Intel Corporation to take deposition of David Heiden (nl) [Entry date 04/02/01]
3/30/01	102	NOTICE by Intel Corporation to take deposition of Bradley C. Byk (nl) [Entry date 04/02/01]

3/30/01	103	NOTICE by Intel Corporation to take deposition of Paula Thibodaux-Golz (nl) [Entry date 04/02/01]
3/30/01	104	NOTICE by Intel Corporation to take deposition of Todd Vafiades (nl) [Entry date 04/02/01]
3/30/01	105	NOTICE by Intel Corporation to take deposition of Cary Berger (nl) [Entry date 04/02/01]
3/30/01	106	NOTICE by Intel Corporation to take deposition of Rich Nelson (nl) [Entry date 04/02/01]
3/30/01	107	NOTICE by Intel Corporation to take deposition of Jeff Thermond (nl) [Entry date 04/02/01]
3/30/01	108	NOTICE by Intel Corporation to take deposition of Vivian Hsiun (nl) [Entry date 04/02/01]
3/30/01	109	NOTICE by Intel Corporation to take deposition of Kimming So (nl) [Entry date 04/02/01]
3/30/01	110	NOTICE by Intel Corporation to take deposition of Sheng (Shawn) Zhong (nl) [Entry date 04/02/01]
3/30/01	111	NOTICE by Intel Corporation to take deposition of Ramanujan Valmiki (nl) [Entry date 04/02/01]
3/30/01	112	NOTICE by Intel Corporation to take deposition of Sandeep Bhatia (nl) [Entry date 04/02/01]
3/30/01	113	NOTICE by Intel Corporation to take deposition of Rajendra K. Khare (nl) [Entry date 04/02/01]
3/30/01	114	NOTICE by Intel Corporation to take deposition of Alexander MacInnis (nl) [Entry date 04/02/01]
3/30/01	115	NOTICE by Intel Corporation to take deposition of Jose Alvarez (nl) [Entry date 04/02/01]
3/30/01	116	NOTICE by Intel Corporation to take deposition of Broadcom Corporation on 3/21/01. (nl) [Entry date 04/02/01]
3/30/01	117	Letter from J. Andrew Huffman, Esq. to Clerk re original declarations. (nl) [Entry date 04/02/01]
4/2/01	118	RESPONSE by Cisco Systems, Inc. to [84-1] motion to Compel production of documents by Cisco Systems, Inc. (nl)
4/2/01	119	Steno Notes for 3/27/01; rprtr. K. Maurer (nl)
4/2/01	120	TRANSCRIPT filed [0-0] telephone conference for dates of 3/27/01 (nl)
4/6/01	121	Reply Brief Filed by Intel Corporation [84-1] motion to Compel production of documents by Cisco Systems, Inc. {SEALED}. (nl) [Entry date 04/09/01]
4/6/01	122	(REDACTED) Reply Brief Filed by Intel Corporation [84-1] motion to Compel production of documents by Cisco Systems, Inc. (nl) [Entry date 04/09/01]
4/6/01	123	Reply Declaration of Todd G. Miller in support of Intel's motion to compel production of documents by Cisco Systems, Inc. {SEALED}. (nl) [Entry date 04/09/01]

4/6/01	124	(REDACTED) Declaration of Todd G. Miller in support of Intel's motion to compel production of documents by Cisco Systems, Inc. (nl) [Entry date 04/09/01]
4/10/01	--	Tele-conference held; rprtr. V. Gunning (nl)
4/10/01	125	MOTION by Broadcom Corporation with Proposed Order for T.O. Kong, Esq. to Appear Pro Hac Vice (nl) [Entry date 04/11/01]
4/10/01	126	MOTION by Broadcom Corporation with Proposed Order for David Steuer, Esq. to Appear Pro Hac Vice (nl) [Entry date 04/11/01]
4/11/01	127	RESPONSE by Motorola, Inc. to [92-1] motion to Compel production of documents by Motorola, Inc. (nl)
4/11/01	--	So Ordered granting [125-1] motion for T.O. Kong, Esq. to Appear Pro Hac Vice granting [126-1] motion for David Steuer, Esq. to Appear Pro Hac Vice (signed by Judge Roderick R. McKelvie) Notice to all parties. (nl) [Entry date 04/12/01]
4/12/01	128	TRANSCRIPT filed [0-0] telephone conference for dates of 4/10/01 (nl)
4/12/01	--	Tele-conference held; rprtr. K. Maurer (nl) [Entry date 04/19/01]
4/17/01	129	Reply Brief Filed by Intel Corporation [92-1] motion to Compel production of documents by Motorola, Inc. (nl) [Entry date 04/18/01]
4/17/01	--	Tele-conference held; rprtr. K. Maurer (nl) [Entry date 04/18/01]
4/18/01	130	MOTION by Intel Corporation with Proposed Order for Shelley K. Wessels, Esq. to Appear Pro Hac Vice (nl) [Entry date 04/19/01]
4/18/01	131	MOTION by Intel Corporation with Proposed Order for Todd G. Miller, Esq. to Appear Pro Hac Vice (nl) [Entry date 04/19/01]
4/18/01	132	MOTION by Intel Corporation with Proposed Order for Lauren A. Degnan, Esq. to Appear Pro Hac Vice (nl) [Entry date 04/19/01]
4/18/01	133	MOTION by Intel Corporation with Proposed Order for Linda Liu Kordziel, Esq. to Appear Pro Hac Vice (nl) [Entry date 04/19/01]
4/18/01	134	MOTION by Intel Corporation with Proposed Order for David S. Shuman, Esq. to Appear Pro Hac Vice (nl) [Entry date 04/19/01]
4/19/01	--	Tele-conference held; rprtr. K. Maurer (nl) [Entry date 04/20/01]
4/20/01	135	Steno Notes for 4/17/01; rprtr. K. Maurer (nl)
4/20/01	--	So Ordered granting [130-1] motion for Shelley K. Wessels, Esq. to Appear Pro Hac Vice granting [131-1] motion for Todd G. Miller, Esq. to Appear Pro Hac Vice granting [132-1] motion for Lauren A. Degnan, Esq. to Appear Pro Hac

		Vice granting [133-1] motion for Linda Liu Kordziel, Esq. to Appear Pro Hac Vice granting [134-1] motion for David S. Shuman, Esq. to Appear Pro Hac Vice (signed by Judge Roderick R. McKelvie) Notice to all parties. (nl) [Entry date 04/23/01]
4/23/01	136	Steno Notes for 4/19/01; rprtr. K. Maurer (nl)
4/24/01	137	TRANSCRIPT filed [0-0] telephone conference for dates of 4/17/01 (nl)
4/24/01	138	TRANSCRIPT filed [0-0] telephone conference for dates of 4/19/01 (nl)
4/25/01	139	Letter from Intel Corporation to Judge McKelvie dated 4/25/01 {SEALED}. (nl)
4/25/01	--	Tele-conference held; rprtr. K. Maurer (nl) [Entry date 04/26/01]
4/27/01	140	Letter from J. Andrew Huffman, Esq. to Judge McKelvie re Intel's pending motions to compel. (nl) [Entry date 04/30/01]
4/30/01	141	TRANSCRIPT filed [0-0] telephone conference for dates of 4/25/01 (nl)
4/30/01	142	MOTION by Broadcom Corporation with Proposed Order for James C. Yoon, Esq. to Appear Pro Hac Vice (nl) [Entry date 05/01/01]
5/1/01	143	Steno Notes for 4/25/01; rprtr. K. Maurer (nl)
5/2/01	144	Letter from Intel Corporation to Judge McKelvie dated 5/2/01 {SEALED}. (nl) [Entry date 05/03/01]
5/2/01	--	So Ordered granting [142-1] motion for James C. Yoon, Esq. to Appear Pro Hac Vice (signed by Judge Roderick R. McKelvie) Notice to all parties. (nl) [Entry date 05/03/01]
5/2/01	145	Letter STATUS REPORT by Broadcom Corporation (nl) [Entry date 05/03/01]
5/7/01	146	Letter from J. Andrew Huffman, Esq. to Clerk re original reply declaration of Todd G. Miller filed 4/6/01. (nl) [Entry date 05/08/01]
5/9/01	147	Amended NOTICE by Intel Corporation to take deposition of Devesh Garg on 4/2/01 (nl) [Entry date 05/10/01]
5/9/01	148	Amended NOTICE by Intel Corporation to take deposition of Hahn Nguyen on 4/6/01 (nl) [Entry date 05/10/01]
5/9/01	149	Amended NOTICE by Intel Corporation to take deposition of Lee Leibig on 4/13/01 (nl) [Entry date 05/10/01]
5/9/01	150	CERTIFICATE OF SERVICE by Intel Corporation re request for inspection. (nl) [Entry date 05/10/01]
5/9/01	151	Amended NOTICE by Intel Corporation to take deposition of Paula Thibodaux-Golz on 4/11/01 (nl) [Entry date 05/10/01]
5/9/01	152	Amended NOTICE by Intel Corporation to take deposition of Bradley C. Byk on 5/1/01 (nl) [Entry date 05/10/01]

5/9/01	153	Amended NOTICE by Intel Corporation to take deposition of David Heiden on 3/29/01 (nl) [Entry date 05/10/01]
5/9/01	154	Amended NOTICE by Intel Corporation to take deposition of Greg Nix on 4/11/01 (nl) [Entry date 05/10/01]
5/9/01	155	NOTICE by Intel Corporation to take deposition of James Muth on 4/19/01 (nl) [Entry date 05/10/01]
5/9/01	156	NOTICE by Intel Corporation to take deposition of Yossi Cohen on 4/18/01 (nl) [Entry date 05/10/01]
5/9/01	157	NOTICE by Intel Corporation to take deposition of Brian Sprague on 4/13/01 (nl) [Entry date 05/10/01]
5/9/01	158	NOTICE by Intel Corporation to take deposition of Kelly Coffey on 4/16/01 (nl) [Entry date 05/10/01]
5/9/01	159	NOTICE by Intel Corporation to take deposition of James Finch on 4/17/01 (nl) [Entry date 05/10/01]
5/9/01	160	Subpoena for Sheraton Suites attn: Edwardo Fernandez, Manager (nl) [Entry date 05/10/01]
5/9/01	161	NOTICE by Intel Corporation to take deposition of William Wotzak on 4/13/01 (nl) [Entry date 05/10/01]
5/9/01	162	NOTICE by Intel Corporation to take deposition of Carl Steinke on 4/12/01 (nl) [Entry date 05/10/01]
5/9/01	163	NOTICE by Intel Corporation to take deposition of Greg Wolfson on 4/16/01 (nl) [Entry date 05/10/01]
5/9/01	164	Amended NOTICE by Intel Corporation to take deposition of Todd Vafiades on 5/11/01 (nl) [Entry date 05/10/01]
5/9/01	165	Second NOTICE by Intel Corporation to take deposition of Broadcom Corporation on 4/25/01 (nl) [Entry date 05/10/01]
5/9/01	166	NOTICE by Intel Corporation to take deposition of Kevin Brown on 4/20/01 (nl) [Entry date 05/10/01]
5/9/01	167	Second Amended NOTICE by Intel Corporation to take deposition of Paula Thibodaux-Golz on 4/10/01 (nl) [Entry date 05/10/01]
5/9/01	168	NOTICE by Intel Corporation to take deposition of Cary Berger on 4/11/01 (nl) [Entry date 05/10/01]
5/9/01	169	Amended NOTICE by Intel Corporation to take deposition of Scott Cunningham on 4/4/01 (nl) [Entry date 05/10/01]
5/11/01	170	Notice of Subpoena for Hampton Inn (nl) [Entry date 05/14/01]
5/11/01	171	CERTIFICATE OF SERVICE by Intel Corporation re 2nd suppl. response to 1st set of interrogs. (nl) [Entry date 05/14/01]
5/11/01	172	CERTIFICATE OF SERVICE by Intel Corporation re response to 2nd set of interrogs. (nl) [Entry date 05/14/01]
5/11/01	173	CERTIFICATE OF SERVICE by Intel Corporation re response to 3rd set of interrogs. (nl) [Entry date 05/14/01]
5/11/01	174	Amended NOTICE by Intel Corporation to take deposition of

Glen Grover on 4/26/01 (nl) [Entry date 05/15/01]

5/11/01 175 NOTICE by Intel Corporation to take deposition of Glen Grover on 5/1/01 (nl) [Entry date 05/15/01]

5/11/01 176 NOTICE by Intel Corporation to take deposition of Hossein Zelli on 5/21/01 (nl) [Entry date 05/15/01]

5/11/01 177 NOTICE by Intel Corporation to take deposition of Reza Khan on 6/5/01 (nl) [Entry date 05/15/01]

5/11/01 178 NOTICE by Intel Corporation to take deposition of Fred Taylor on 5/23/01 (nl) [Entry date 05/15/01]

5/11/01 179 NOTICE by Intel Corporation to take deposition of Greg Kranawetter on 5/29/01 (nl) [Entry date 05/15/01]

5/11/01 180 NOTICE by Intel Corporation to take deposition of Jason Demas on 6/1/01 (nl) [Entry date 05/15/01]

5/11/01 181 NOTICE by Intel Corporation to take deposition of Jin-Chin Wang on 5/30/01 (nl) [Entry date 05/15/01]

5/11/01 182 Amended NOTICE by Intel Corporation to take deposition of Steve Tsubota on 5/22/01 (nl) [Entry date 05/15/01]

5/11/01 183 Amended NOTICE by Intel Corporation to take deposition of James Muth on 5/25/01 (nl) [Entry date 05/15/01]

5/11/01 184 NOTICE by Intel Corporation to take deposition of Carolyn Walker on 4/30/01 (nl) [Entry date 05/15/01]

5/11/01 185 NOTICE by Intel Corporation to take deposition of Mike Case on 5/2/01 (nl) [Entry date 05/15/01]

5/11/01 186 NOTICE by Intel Corporation to take deposition of Vivek Bhargava on 5/3/01 (nl) [Entry date 05/15/01]

5/11/01 187 NOTICE by Intel Corporation to take deposition of Jeff Tingley on 5/4/01 (nl) [Entry date 05/15/01]

5/11/01 188 NOTICE by Intel Corporation to take deposition of Lionel D'Luna on 5/7/01 (nl) [Entry date 05/15/01]

5/11/01 189 NOTICE by Intel Corporation to take deposition of Steve Tsubota on 5/8/01 (nl) [Entry date 05/15/01]

5/11/01 190 Amended NOTICE by Intel Corporation to take deposition of Brian Sprague on 6/4/01 (nl) [Entry date 05/15/01]

5/11/01 191 Amended NOTICE by Intel Corporation to take deposition of Vivek Bhargava on 6/11/01 (nl) [Entry date 05/15/01]

5/11/01 192 Amended NOTICE by Intel Corporation to take deposition of Carolyn Walker on 6/13/01 (nl) [Entry date 05/15/01]

5/11/01 193 Second Amended NOTICE by Intel Corporation to take deposition of Rich Nelson on 5/18/01 (nl) [Entry date 05/15/01]

5/16/01 194 Letter from Dale Dube, Esq. to Judge McKelvie re status of Motorola's compliance with Intel's subpoena for documents. (nl)

5/16/01 195 MOTION by Motorola, Inc. with Proposed Order for Vincent

		P. Kovalick, Esq. to Appear Pro Hac Vice (nl) [Entry date 05/17/01]
5/16/01	--	Tele-conference held; rprtr. V. Gunning (nl) [Entry date 05/17/01]
5/17/01	--	So Ordered granting [195-1] motion for Vincent P. Kovalick, Esq. to Appear Pro Hac Vice (signed by Judge Roderick R. McKelvie) Notice to all parties. (nl) [Entry date 05/18/01]
5/18/01	196	TRANSCRIPT filed [0-0] telephone conference for dates of 5/16/01 (nl)
5/22/01	--	Tele-conference held; rprtr. V. Gunning (nl) [Entry date 05/23/01]
5/23/01	197	TRANSCRIPT filed [0-0] telephone conference for dates of 5/22/01 (nl)
5/29/01	--	Tele-conference held; rprtr. V. Gunning (nl)
5/30/01	198	TRANSCRIPT filed [0-0] telephone conference for dates of 5/29/01 (nl)
5/31/01	--	Tele-conference held; rprtr. V. Gunning (nl)
6/1/01	199	TRANSCRIPT filed [0-0] telephone conference for dates of 5/31/01 (nl) [Entry date 06/04/01]
6/5/01	200	Letter dated 6/5/01 from Fish & Richardson to Judge McKelvie re submission of documents relating to discovery {SEALED}. (nl)
6/5/01	--	Tele-conference held; rprtr. V. Gunning (nl) [Entry date 06/06/01]
6/6/01	201	TRANSCRIPT filed [0-0] telephone conference for dates of 6/5/01 (nl)
6/7/01	--	Tele-conference held; rprtr. V. Gunning (nl)
6/8/01	202	Amended NOTICE by Intel Corporation to take deposition of Jose Alvarez on 5/31/01 (nl) [Entry date 06/11/01]
6/8/01	203	Amended NOTICE by Intel Corporation to take deposition of Kelly Coffey on 5/16/01 (nl) [Entry date 06/11/01]
6/8/01	204	Amended NOTICE by Intel Corporation to take deposition of James Finch on 5/10/01 (nl) [Entry date 06/11/01]
6/8/01	205	Amended NOTICE by Intel Corporation to take deposition of Rich Nelson on 5/10/01 (nl) [Entry date 06/11/01]
6/8/01	206	Amended NOTICE by Intel Corporation to take deposition of Carl Steinke on 5/9/01 (nl) [Entry date 06/11/01]
6/8/01	207	Amended NOTICE by Intel Corporation to take deposition of Kimming So on 5/7/01 (nl) [Entry date 06/11/01]
6/8/01	208	Second Amended NOTICE by Intel Corporation to take deposition of Kevin Brown on 5/3/01 (nl) [Entry date 06/11/01]
6/8/01	209	Amended NOTICE by Intel Corporation to take deposition of

		William Wotzak on 5/2/01 (nl) [Entry date 06/11/01]
6/8/01	210	Amended NOTICE by Intel Corporation to take deposition of Sheng (Shawn) Zhong on 5/1/01 (nl) [Entry date 06/11/01]
6/8/01	211	Second Amended NOTICE by Intel Corporation to take deposition of Carl Steinke on 5/11/01 (nl) [Entry date 06/11/01]
6/8/01	212	NOTICE by Intel Corporation to take deposition of Robert Lutze on 6/5/01 (nl) [Entry date 06/11/01]
6/8/01	213	NOTICE by Intel Corporation to take deposition of Charles Anderson on 6/1/01 (nl) [Entry date 06/11/01]
6/8/01	214	NOTICE by Intel Corporation to take deposition of Alan Trerise on 5/29/01 (nl) [Entry date 06/11/01]
6/8/01	215	NOTICE by Intel Corporation to take deposition of John Lappington on 5/31/01 (nl) [Entry date 06/11/01]
6/8/01	216	NOTICE by Intel Corporation to take deposition of Aurelio Fernandez on 5/25/01 (nl) [Entry date 06/11/01]
6/8/01	217	NOTICE by Intel Corporation to take deposition of Terriel Charlebois on 5/22/01 (nl) [Entry date 06/11/01]
6/8/01	218	NOTICE by Intel Corporation to take deposition of Tim Lindenfelser on 5/24/01 (nl) [Entry date 06/11/01]
6/8/01	219	NOTICE by Intel Corporation to take deposition of John Anecki on 5/23/01 (nl) [Entry date 06/11/01]
6/8/01	220	NOTICE by Intel Corporation to take deposition of Laura Brandlin on 5/22/01 (nl) [Entry date 06/11/01]
6/8/01	221	NOTICE by Intel Corporation to take deposition of Monica Ford on 5/21/01 (nl) [Entry date 06/11/01]
6/8/01	222	NOTICE by Intel Corporation to take deposition of Ester Kim on 5/21/1 (nl) [Entry date 06/11/01]
6/8/01	223	NOTICE by Intel Corporation to take deposition of Lachalle Gillis on 5/23/01 (nl) [Entry date 06/11/01]
6/8/01	224	NOTICE by Intel Corporation to take deposition of Martin Colombatto on 6/4/01 (nl) [Entry date 06/11/01]
6/8/01	225	Amended NOTICE by Intel Corporation to take deposition of Ramanujan Valmiki on 6/11/01 (nl) [Entry date 06/11/01]
6/8/01	226	Second Amended NOTICE by Intel Corporation to take deposition of Vivek Bhargava on 6/25/01 (nl) [Entry date 06/11/01]
6/8/01	227	Second Amended NOTICE by Intel Corporation to take deposition of Carolyn Walker on 6/21/01 (nl) [Entry date 06/11/01]
6/8/01	228	Amended NOTICE by Intel Corporation to take deposition of Sandeep Bhatia on 6/13/01 (nl) [Entry date 06/11/01]
6/8/01	229	Second Amended NOTICE by Intel Corporation to take deposition of Jose Alvarez on 6/13/01 (nl) [Entry date 06/11/01]

6/8/01	230	Amended NOTICE by Intel Corporation to take deposition of Rajendra K. Khare on 6/12/01 (nl) [Entry date 06/11/01]
6/8/01	231	Second Amended NOTICE by Intel Corporation to take deposition of Brian Sprague on 6/28/01 (nl) [Entry date 06/11/01]
6/8/01	232	Amended NOTICE by Intel Corporation to take deposition of Yossi Cohen on 6/26/01 (nl) [Entry date 06/11/01]
6/8/01	233	Amended NOTICE by Intel Corporation to take deposition of Esther Kim on 6/7/01 (nl) [Entry date 06/11/01]
6/8/01	234	Amended NOTICE by Intel Corporation to take deposition of Lachalle Gillis on 6/7/01 (nl) [Entry date 06/11/01]
6/8/01	235	Amended NOTICE by Intel Corporation to take deposition of Monica Ford on 6/7/01 (nl) [Entry date 06/11/01]
6/11/01	--	Tele-conference held; rprtr. V. Gunning (nl)
6/12/01	236	TRANSCRIPT filed [0-0] telephone conference for dates of 6/7/01 (nl)
6/12/01	237	TRANSCRIPT filed [0-0] telephone conference for dates of 6/11/01 (nl) .
6/19/01	--	Tele-conference held; rprtr. K. Maurer (nl)
6/20/01	238	Steno Notes for 6/19/01; rprtr. K. Maurer (nl)
6/21/01	239	TRANSCRIPT filed [0-0] telephone conference for dates of 6/19/01 (nl) [Entry date 06/22/01]
6/26/01	240	Amended NOTICE by Intel Corporation to take deposition of AT&T Broadband Business Services, Inc. on 6/28/01 (nl) [Entry date 06/27/01]
6/27/01	241	MOTION by Broadcom Corporation with Proposed Order for James C. Otteson, Esq. to Appear Pro Hac Vice (nl) [Entry date 06/28/01]
6/27/01	242	MOTION by Broadcom Corporation with Proposed Order for Stacy B. Margolies, Esq. to Appear Pro Hac Vice (nl) [Entry date 06/28/01]
6/28/01	--	So Ordered granting [241-1] motion for James C. Otteson, Esq. to Appear Pro Hac Vice granting [242-1] motion for Stacy B. Margolies, Esq. to Appear Pro Hac Vice (signed by Judge Roderick R. McKelvie) Notice to all parties. (nl) [Entry date 06/29/01]
7/9/01	--	Tele-conference held; rprtr. V. Gunning (nl) [Entry date 07/10/01]
7/10/01	243	MOTION by Intel Corporation with Proposed Order for John A. Dragseth, Esq. to Appear Pro Hac Vice (nl)
7/10/01	--	Tele-conference held; rprtr. K. Maurer (nl) [Entry date 07/18/01]
7/11/01	244	CERTIFICATE OF SERVICE by Intel Corporation re 3rd set of interrogs. nos. 9-10 to dft. (nl) [Entry date 07/12/01]

7/11/01	245	CERTIFICATE OF SERVICE by Intel Corporation re 1st set of requests for admissions nos. 1-31. (nl) [Entry date 07/12/01]
7/11/01	246	CERTIFICATE OF SERVICE by Intel Corporation re 2nd suppl. response to dft's 3rd set of interrogs. (nl) [Entry date 07/12/01]
7/11/01	247	CERTIFICATE OF SERVICE by Intel Corporation re 4th suppl. response to dft's 1st set of interrogs. (nl) [Entry date 07/12/01]
7/11/01	248	Second Amended NOTICE by Intel Corporation to take deposition of Ramanujan Valmiki on 6/13/01 (nl) [Entry date 07/12/01]
7/11/01	249	Second Amended NOTICE by Intel Corporation to take deposition of Sandeep Bhatia on 6/15/01 (nl) [Entry date 07/12/01]
7/11/01	250	Second Amended NOTICE by Intel Corporation to take deposition of Rajendra K. Khare on 6/16/01 (nl) [Entry date 07/12/01]
7/11/01	251	Third Amended NOTICE by Intel Corporation to take deposition of Vivek Bhargava on 6/25/01 (nl) [Entry date 07/12/01]
7/11/01	252	Second Amended NOTICE by Intel Corporation to take deposition of Yossi Cohen on 6/26/01 (nl) [Entry date 07/12/01]
7/12/01	--	So Ordered granting [243-1] motion for John A. Dragseth, Esq. to Appear Pro Hac Vice (signed by Judge Roderick R. McKelvie) Notice to all parties. (nl)
7/12/01	253	TRANSCRIPT filed [0-0] telephone conference for dates of 7/9/01 (nl)
7/16/01	254	MOTION by Broadcom Corporation with Proposed Order for Julie M. Holloway, Esq. to Appear Pro Hac Vice (nl) [Entry date 07/17/01]
7/17/01	--	So Ordered granting [254-1] motion for Julie M. Holloway, Esq. to Appear Pro Hac Vice (signed by Judge Roderick R. McKelvie) Notice to all parties. (nl) [Entry date 07/18/01]
7/17/01	255	Letter from Richard Morse, Esq. to Judge McKelvie encl. letter dated 7/17/01 from Ron Shulman, Esq. to Judge McKelvie re discovery responses. (nl) [Entry date 07/18/01]
7/17/01	256	Third NOTICE by Intel Corporation to take deposition of Broadcom Corporation on 7/25/01 (nl) [Entry date 07/18/01]
7/17/01	257	Third Amended NOTICE by Intel Corporation to take deposition of Carolyn Walker on 7/3/01 (nl) [Entry date 07/18/01]
7/17/01	258	Notice of Subpoena for Robert Barrett (nl) [Entry date 07/18/01]
7/17/01	259	Notice of Subpoena for Jeff Enderwick (nl) [Entry date 07/18/01]
7/17/01	260	Notice of Subpoena for Harmonic, Inc. (nl)

		[Entry date 07/18/01]
7/17/01	261	Notice of Subpoena for Chris Hoogenboom (nl) [Entry date 07/18/01]
7/17/01	262	Notice of Subpoena for IBM Corporation (nl) [Entry date 07/18/01]
7/17/01	263	CERTIFICATE OF SERVICE by Intel Corporation re response to dft's 1st set of requests for admission. (nl) [Entry date 07/18/01]
7/17/01	264	Amended NOTICE by Intel Corporation to take deposition of Jin-Chin Wang on 7/3/01 (nl) [Entry date 07/18/01]
7/17/01	265	CERTIFICATE OF SERVICE by Intel Corporation re response to dft's 5th set of interrogs. (no. 32). (nl) [Entry date 07/18/01]
7/17/01	266	CERTIFICATE OF SERVICE by Intel Corporation re response to dft's 4th set of interrogs. (nos. 17-31). (nl) [Entry date 07/18/01]
7/17/01	267	CERTIFICATE OF SERVICE by Intel Corporation re response to dft's 4th set of document requests (requests 342-383). (nl) [Entry date 07/18/01]
7/17/01	268	CERTIFICATE OF SERVICE by Intel Corporation re 5th suppl. response to dft's 1st set of interrogs. (nl) [Entry date 07/18/01]
7/17/01	269	CERTIFICATE OF SERVICE by Intel Corporation re 6th suppl. response to dft's 1st set of interrogs. (nl) [Entry date 07/18/01]
7/17/01	270	CERTIFICATE OF SERVICE by Intel Corporation re amended and suppl. response to dft's 3rd set of interrogs. (nl) [Entry date 07/18/01]
7/18/01	271	TRANSCRIPT filed [0-0] telephone conference for dates of 7/10/01 (nl)
7/18/01	272	Steno Notes for 7/10/01; rprtr. K. Maurer (nl)
7/18/01	--	Tele-conference held; rprtr. K. Maurer (nl)
7/19/01	273	NOTICE by Intel Corporation to take deposition of 3Com Corporation on 7/30/01 (nl) [Entry date 07/20/01]
7/19/01	274	Steno Notes for 7/18/01; rprtr. K. Maurer (nl) [Entry date 07/20/01]
7/19/01	275	TRANSCRIPT filed [0-0] telephone conference for dates of 7/18/01 (nl) [Entry date 07/20/01]
7/23/01	276	MOTION by Cablevision Systems to Quash, and/or to Amend ("modify") non-party subpoena Answer Brief due 8/6/01 re: [276-1] motion, Answer Brief due 8/6/01 re: [276-2] motion (bkb) [Entry date 07/24/01]
7/23/01	277	MEMORANDUM by Cablevision Systems in support of [276-1] motion to Quash, [276-2] motion to Amend ("modify") non-party subpoena (bkb) [Entry date 07/24/01]
7/24/01	278	Declaration of Charles A. Forma (re movant's motion to

		quash) (bkb)
7/24/01	279	Declaration of Bradley A. Harsch (re movant's motion to quash) (bkb)
7/26/01	--	Tele-conference held; rprtr. B. Gaffigan (nl) [Entry date 07/31/01]
7/27/01	280	TRANSCRIPT filed for dates of 7/26/01 (nl) [Entry date 07/30/01]
7/27/01	281	MOTION by non-party 3Com Corporation with Proposed Order to Quash and objections to ptf's subpoenas (nl) [Entry date 07/30/01]
7/31/01	282	Letter from Richard Rollo, Esq. to Clerk re original affidavit of Ronald B. Friedman. (nl)
8/1/01	283	Steno Notes for 7/26/01; rprtr. B. Gaffigan (nl)
8/1/01	284	CERTIFICATE OF SERVICE by Intel Corporation re 3rd set of requests for production (no. 210) to dft. (nl)
8/1/01	285	CERTIFICATE OF SERVICE by Intel Corporation re 2nd request for inspection (nos. 12-13) to dft. (nl)
8/1/01	286	CERTIFICATE OF SERVICE by Intel Corporation re 4th set of interrogs. nos. 11-31 to dft. (nl)
8/1/01	287	CERTIFICATE OF SERVICE by Intel Corporation re 2nd set of requests for admissions nos. 32-48 to dft. (nl)
8/1/01	288	CERTIFICATE OF SERVICE by Intel Corporation re 3rd request for inspection (no. 14) to dft. (nl)
8/1/01	289	CERTIFICATE OF SERVICE by Intel Corporation re 5th set of interrogs. (no. 32-50) to dft. (nl)
8/1/01	290	CERTIFICATE OF SERVICE by Intel Corporation re 3rd set of requests for admissions (no. 49-103) to dft. (nl)
8/1/01	291	CERTIFICATE OF SERVICE by Intel Corporation re 4th set of requests for prod. (no. 211-224) to dft. (nl)
8/1/01	292	NOTICE by Intel Corporation to take deposition of Rick Strohmayer on 8/7/01 (nl)
8/1/01	293	NOTICE by Intel Corporation to take deposition of Richard Harmon on 8/3/01 (nl)
8/1/01	294	Amended NOTICE by Intel Corporation to take deposition of Jeff Tingley on 7/23/01 (nl)
8/1/01	295	Amended NOTICE by Intel Corporation to take deposition of Reza Khan on 8/10/01 (nl)
8/1/01	296	Third Amended NOTICE by Intel Corporation to take deposition of Jose Alvarez on 8/9/01 (nl)
8/1/01	297	Third Amended NOTICE by Intel Corporation to take deposition of Brian Sprague on 8/2/01 (nl)
8/1/01	298	Amended NOTICE by Intel Corporation to take deposition of Aurelio Fernandez on 7/13/01 (nl)

8/1/01	299	NOTICE by Intel Corporation to take deposition of Cablevision Systems on 7/25/01 (nl)
8/1/01	300	NOTICE by Intel Corporation to take deposition of Glen Grover on 8/1/01 (nl)
8/1/01	301	Third Amended NOTICE by Intel Corporation to take deposition of Yossi Cohen on 7/31/01 (nl)
8/1/01	302	Amended NOTICE by Intel Corporation to take deposition of Tim Lindenfelser on 7/31/01 (nl)
8/1/01	303	Amended NOTICE by Intel Corporation to take deposition of Jeff Thermond on 7/27/01 (nl)
8/1/01	304	NOTICE by Intel Corporation to take deposition of David Rosmann on 8/6/01 (nl)
8/1/01	305	NOTICE by Intel Corporation to take deposition of Henry T. Nicholas III on 8/8/01 (nl)
8/1/01	306	NOTICE by Intel Corporation to take deposition of David A. Dull on 8/7/01 (nl)
8/1/01	307	Fifth NOTICE by Intel Corporation to take deposition of Broadcom Corporation on 8/3/01 (nl)
8/1/01	308	Amended NOTICE by Intel Corporation to take deposition of Chris Hoogenboom on 7/19/01 (nl)
8/1/01	309	Fourth NOTICE by Intel Corporation to take deposition of Broadcom Corporation on 8/1/01 (nl)
8/1/01	310	Amended Third NOTICE by Intel Corporation to take deposition of Broadcom Corporation on 7/25/01 (nl)
8/1/01	311	NOTICE by Intel Corporation to take deposition of Broadcom Network on 7/25/01 (nl)
8/1/01	312	Amended NOTICE by Intel Corporation to take deposition of Jason Demas on 7/17/01 (nl)
8/1/01	313	Notice of Subpoena and NOTICE by Intel Corporation to take deposition of Vahid Manian on 7/25/01 (nl)
8/1/01	314	NOTICE by Intel Corporation to take deposition of Kelly Coffey on 8/7/01 (nl)
8/1/01	315	NOTICE of subpoena to Robert E. Sokhol, Esq. by Intel Corporation (nl)
8/1/01	316	NOTICE of subpoena for Finnegan, Henderson, Farabow, Garrett, Dunner LLP by Intel Corporation (nl)
8/1/01	317	NOTICE by Intel Corporation to take deposition of Millenium Digital Media, Inc. on 7/25/01 (nl)
8/1/01	318	Notice of subpoena and NOTICE by Intel Corporation to take deposition of Apple Computer, Inc. on 7/25/01 (nl)
8/1/01	319	NOTICE of subpoena for Hewlett-Packard Co. by Intel Corporation (nl)
8/1/01	320	Notice of Subpoena and NOTICE by Intel Corporation to take deposition of Charter Communications, Inc. on 7/23/01 (nl)

8/1/01	321	Notice of Subpoena and NOTICE by Intel Corporation to take deposition of Comcast Cable Communications, Inc. on 7/23/01 (nl)
8/1/01	322	Notice of Subpoena and NOTICE by Intel Corporation to take deposition of Cox Communications on 7/24/01 (nl)
8/1/01	323	Notice of Subpoena and NOTICE by Intel Corporation to take deposition of Adelphia Communications Corp. on 7/24/01 (nl)
8/1/01	324	NOTICE of subpoena to Cisco Systems, Inc. by Intel Corporation (nl)
8/1/01	325	NOTICE of subpoena for Thomson Consumer Electronics, Inc. by Intel Corporation (nl)
8/3/01	--	WITHDRAWAL of [276-1] motion to Quash, [276-2] motion to Amend ("modify") non-party subpoena (nl) [Entry date 08/06/01]
8/3/01	326	NOTICE of withdrawal of motion to quash by Cablevision Systems (nl) [Entry date 08/06/01]
8/6/01	327	NOTICE by Intel Corporation to take deposition of Time Warner Entertainment Company on 8/13/01 (nl) [Entry date 08/07/01]
8/6/01	328	NOTICE by Intel Corporation to take deposition of Pioneer New Media Technologies, Inc. on 8/13/01 (nl) [Entry date 08/07/01]
8/6/01	329	NOTICE by Intel Corporation to take deposition of Pioneer Digital Technologies, Inc. on 8/14/01 (nl) [Entry date 08/07/01]
8/9/01	330	NOTICE by Intel Corporation to take deposition of Henry Samueli on 8/13/01 (db) [Entry date 08/10/01]
8/9/01	331	NOTICE by Intel Corporation to take deposition of Bao Vuong on 8/8/01 (db) [Entry date 08/10/01]
8/9/01	332	SIXTH NOTICE by Intel Corporation to take deposition of Broadcom Corporation on 8/10/01 (db) [Entry date 08/10/01]
8/9/01	333	NOTICE by Intel Corporation to take deposition of LSI Logic Corporation on 8/15/01 (db) [Entry date 08/10/01]
8/10/01	334	MEMORANDUM by Intel Corporation in opposition to [281-1] motion to Quash and objections to ptf's subpoenas (nl) [Entry date 08/13/01]
8/10/01	335	Declaration of Steven J. Balick, Esq. in opposition to 3Com Corp's motion to quash subpoena. (nl) [Entry date 08/13/01]
8/10/01	336	CERTIFICATE OF SERVICE by third-party Pioneer New Media Technologies, Inc. re objections to Intel's subpoena. (nl) [Entry date 08/13/01]
8/10/01	337	CERTIFICATE OF SERVICE by third-party Pioneer Digital Technologies, Inc. re objections to Intel's subpoena. (nl) [Entry date 08/13/01]
8/13/01	338	CERTIFICATE OF SERVICE by Comcast Cable Comm. re responses and objections to subpoena. (nl)

8/15/01	339	MOTION by Intel Corporation to Compel Comcast's deposition testimony and production of documents Answer Brief due 8/29/01 re: .[339-1] motion (nl) [Entry date 08/16/01]
8/15/01	340	Declaration of Christopher S. Marchese in support of D.I. 339. (nl) [Entry date 08/16/01]
8/15/01	--	Tele-conference held; rprtr. K. Maurer (nl) [Entry date 08/16/01]
8/16/01	341	Steno Notes for 8/15/01; rprtr. K. Maurer (nl)
8/16/01	342	CERTIFICATE OF SERVICE by Intel Corporation re D.I. 339-340. (nl)
8/16/01	343	Letter from J. Andrew Huffman, Esq. to Clerk re certificate of service (D.I. 342). (nl)
8/17/01	344	Reply Brief Filed [281-1] motion to Quash and objections to ptf's subpoenas (nl)
8/17/01	345	Letter from J. Andrew Huffman, Esq. to Clerk re signature page for the declaration of Christopher S. Marchese. (nl)
8/20/01	346	TRANSCRIPT filed [0-0] telephone conference for dates of 8/15/01; rptr. K. Maurer (lj)
8/20/01	347	MOTION by Broadcom Corporation with Proposed Order for Terrence P. McMahon to Appear Pro Hac Vice (lj) [Entry date 08/21/01]
8/21/01	348	Letter from Richard H. Morse, Esq. to Judge McKelvie, re confirming rescheduling of P/T cnf. from 9/25-9/26, to 9/24-9/25 (lj)
8/22/01	349	MOTION by Broadcom Corporation with Proposed Order for Raphael V. Lupo, Esq.to Appear Pro Hac Vice (lj) [Entry date 08/23/01]
8/23/01	350	NOTICE OF TAKING DEPOSITION OF CHARLES REAMES by Intel Corporation to take deposition of Charles Reames on 8/15/01 @ 9:00 a.m. (lj) [Entry date 08/24/01]
8/23/01	351	NOTICE OF TAKING DEPOSITION OF TIM LINDENFELSER by Intel Corporation to take deposition of Tim Lindenfelser on 8/22/01 @ 9:00 a.m. (lj) [Entry date 08/24/01]
8/23/01	352	NOTICE OF TAKING DEPOSITION OF GARY HUFF by Intel Corporation to take deposition of Gary Huff on 9/15/01 @ 9:00 a.m. (lj) [Entry date 08/24/01]
8/23/01	353	NOTICE OF SERVICE by Intel Corporation, re resp. to Broadcom's 2nd set of reqs. for adm (Nos. 74-206) (lj) [Entry date 08/24/01]
8/23/01	354	NOTICE OF SERVICE by Intel Corporation, re resp. to Broadcom's 3rd set of reqs. for adm. (Nos. 207-320) (lj) [Entry date 08/24/01]
8/23/01	355	NOTICE OF SERVICE by Intel Corporation, re ans. to Broadcom's 4th set of reqs. for adm. (Nos. 321-408) (lj) [Entry date 08/24/01]
8/23/01	356	NOTICE OF SERVICE by Intel Corporation, re supplm. resp. to

Broadcom's 2nd set of interrogs (lj) [Entry date 08/24/01]

8/23/01 357 NOTICE OF SERVICE by Intel Corporation, re resp. to Broadcom's 6th set of interrogs (No. 33) (lj) [Entry date 08/24/01]

8/23/01 358 NOTICE OF SERVICE by Intel Corporation, re resp. to Broadcom's 7th set of interrogs (No. 34) (lj) [Entry date 08/24/01]

8/23/01 359 NOTICE OF SERVICE by Intel Corporation, re response to Broadcom's 8th set if ubterrigs (Nos. 35-36) (lj) [Entry date 08/24/01]

8/23/01 360 NOTICE OF SERVICE by Intel Corporation, re 3rd supplm. resp. to Broadcom's 3rd set of interrogs (lj) [Entry date 08/24/01]

8/23/01 361 NOTICE OF SERVICE by Intel Corporation, re resp. to Broadcom's 5th set of doc. reqs. (Reqs. 342-346) (lj) [Entry date 08/24/01]

8/24/01 -- So Ordered granting [347-1] motion for Terrence P. McMahon to Appear Pro Hac Vice granting [349-1] motion for Raphael V. Lupo, Esq.to Appear Pro Hac Vice (signed by Judge Roderick R. McKelvie) Notice to all parties. (nl) [Entry date 08/27/01]

8/27/01 362 MOTION by Intel Corporation to Compel compliance with its subpoena to Cox Communications, Inc. Answer Brief due 9/10/01 re: [362-1] motion (nl) [Entry date 08/28/01]

8/27/01 363 Declaration of David S. Shuman in support of D.I. 362. (nl) [Entry date 08/28/01]

8/28/01 364 Letter from J. Andrew Huffman, Esq. to Clerk re original signature page of David S. Shuman. (nl) [Entry date 08/29/01]

8/30/01 365 Letter from John Shaw, Esq. to Judge McKelvie re teleconference scheduled for 9/4/01 at 3:30. (nl) [Entry date 08/31/01]

8/30/01 366 STIPULATION with proposed order for extension of time re Comcast Cable's response to motion to compel due 9/7/01. (nl) [Entry date 08/31/01]

8/31/01 367 Answer Brief Filed by Intel Corporation [8-1] motion to Dismiss, [8-2] motion to Transfer Venue {SEALED}. (nl) [Entry date 09/04/01]

8/31/01 368 Appendix to Brief (vol. 1 of 3) Filed by Intel Corporation Appending [367-1] answer brief {SEALED}. (nl) [Entry date 09/04/01]

8/31/01 369 Appendix to Brief (vol. 2 of 3) Filed by Intel Corporation Appending [367-1] answer brief {SEALED}. (nl) [Entry date 09/04/01]

8/31/01 370 Appendix to Brief (vol. 3 of 3) Filed by Intel Corporation Appending [367-1] answer brief {SEALED}. (nl) [Entry date 09/04/01]

9/4/01 371 MOTION by Broadcom Corporation with Proposed Order for Irwin R. Gross, Esq. to Appear Pro Hac Vice (nl)

9/4/01	372	Letter from Steven Balick, Esq. to Judge McKelvie re discovery dispute with 3Com Corporation. (nl)
9/4/01	--	Tele-conference held; rprtr. V. Gunning (nl) [Entry date 09/05/01]
9/4/01	--	So Ordered granting [366-1] stipulation (signed by Judge Roderick R. McKelvie) Notice to all parties. (nl) [Entry date 09/05/01]
9/5/01	--	So Ordered granting [371-1] motion for Irwin R. Gross, Esq. to Appear Pro Hac Vice (signed by Judge Roderick R. McKelvie) Notice to all parties. (nl)
9/6/01	373	TRANSCRIPT filed [0-0] telephone conference for dates of 9/4/01 (nl)
9/6/01	--	Tele-conference held; rprtr. V. Gunning (nl)
9/7/01	374	MOTION by Intel Corporation for John W. Thornburgh, Esq. to Appear Pro Hac Vice (nl)
9/7/01	--	So Ordered granting [374-1] motion for John W. Thornburgh, Esq. to Appear Pro Hac Vice (signed by Judge Roderick R. McKelvie) Notice to all parties. (nl) [Entry date 09/10/01]
9/7/01	375	Opening Brief on Claim Construction Filed by Broadcom Corporation regarding claims 1 and 10 of the '201 patent {SEALED}. (nl) [Entry date 09/10/01]
9/7/01	376	Appendix to Brief Filed by Broadcom Corporation Appending [375-1] opening brief {SEALED}. (nl) [Entry date 09/10/01]
9/7/01	377	Opening Brief on Claim Construction Filed by Broadcom Corporation regarding claim 1 of the '630 patent {SEALED}. (nl) [Entry date 09/10/01]
9/7/01	378	Declaration of Dr. Bernd Girod in support of D.I. 377. (nl) [Entry date 09/10/01]
9/7/01	379	Appendix to Brief Filed by Broadcom Corporation Appending [377-1] opening brief {SEALED}. (nl) [Entry date 09/10/01]
9/7/01	380	Opening Brief on Claim Construction Filed by Broadcom Corporation regarding claims 10, 21, 24 and 29 of the '410 patent. (nl) [Entry date 09/10/01]
9/7/01	381	Appendix to Brief Filed by Broadcom Corporation Appending [380-1] opening brief (nl) [Entry date 09/10/01]
9/7/01	382	Opening Brief on Claim Construction Filed by Broadcom Corporation regarding claims 1, 7, 15 and 18 of the '830 patent {SEALED}. (nl) [Entry date 09/10/01]
9/7/01	383	Declaration of Fouad A. Tobagi in support of D.I. 382. (nl) [Entry date 09/10/01]
9/7/01	384	Appendix to Brief Filed by Broadcom Corporation Appending [382-1] opening brief {SEALED}. (nl) [Entry date 09/10/01]
9/7/01	385	STIPULATION with proposed order for an extension of time: Comcast Cable's response to Intel's motion to compel due 9/28/01. (nl) [Entry date 09/10/01]

9/7/01	386	Opening Brief on Claim Construction Filed by Broadcom Corporation regarding claims 13, 15, 17, 23 and 24 of the '478 patent {SEALED}. (nl) [Entry date 09/10/01]
9/7/01	387	Declaration of Dr. Bernd Girod in support of D.I. 386. (nl) [Entry date 09/10/01]
9/7/01	388	Appendix to Brief Filed by Broadcom Corporation Appending [386-1] opening brief {SEALED}. (nl) [Entry date 09/10/01]
9/7/01	389	Opening Markman Brief Filed by Intel Corporation regarding '410 patent {SEALED}. (nl) [Entry date 09/10/01]
9/7/01	390	Appendix to Brief (vol. 1 of 2) Filed by Intel Corporation Appending [389-1] opening brief {SEALED}. (nl) [Entry date 09/10/01]
9/7/01	391	Appendix to Brief (vol. 2 of 2) Filed by Intel Corporation Appending [389-1] opening brief {SEALED}. (nl) [Entry date 09/10/01]
9/7/01	392	Opening Markman Brief Filed by Intel Corporation regarding '630 patent. (nl) [Entry date 09/10/01]
9/7/01	393	Appendix to Brief (vol. 1 of 2) Filed by Intel Corporation Appending [392-1] opening brief (nl) [Entry date 09/10/01]
9/7/01	394	Appendix to Brief (vol. 2 of 2) Filed by Intel Corporation Appending [392-1] opening brief (nl) [Entry date 09/10/01]
9/7/01	395	Opening Markman Brief Filed by Intel Corporation regarding '478 patent. (nl) [Entry date 09/10/01]
9/7/01	396	Appendix to Brief Filed by Intel Corporation Appending [395-1] opening brief (nl) [Entry date 09/10/01]
9/7/01	397	Opening Markman Brief Filed by Intel Corporation regarding '201 patent. (nl) [Entry date 09/10/01]
9/7/01	398	Appendix to Brief (vol. 1 of 2) Filed by Intel Corporation Appending [397-1] opening brief (nl) [Entry date 09/10/01]
9/7/01	399	Appendix to Brief (vol. 2 of 2) Filed by Intel Corporation Appending [397-1] opening brief (nl) [Entry date 09/10/01]
9/7/01	400	Opening Markman Brief Filed by Intel Corporation regarding '830 patent. (nl) [Entry date 09/10/01]
9/10/01	401	Appendix to Brief Filed by Intel Corporation Appending [400-1] opening brief (nl)
9/10/01	402	Letter from J. Andrew Huffman, Esq. to Clerk re exhibit 5 to D.I. 399. (nl) [Entry date 09/11/01]
9/10/01	403	Letter dated 9/10/01 from J. Andrew Huffman, Esq. to Clerk re tables to D.I. 367 {SEALED}. (nl) [Entry date 09/11/01]
9/11/01	--	So Ordered granting [385-1] stipulation (signed by Judge Roderick R. McKelvie) Notice to all parties. (nl)
9/11/01	--	Deadline updated; reset Answer Brief Deadline to 9/28/01 re: [339-1] motion to Compel Comcast's deposition testimony and production of documents (nl)
9/13/01	404	TRANSCRIPT filed [0-0] telephone conference for dates of

		9/6/01 (nl)
9/18/01	--	Tele-conference held; rprtr. K. Maurer (nl)
9/18/01	405	Letter from Richard Morse, Esq. to Judge McKelvie re proposed schedule for pretrial conference. (nl)
9/18/01	406	Reply Brief Filed by Broadcom Corporation [8-1] motion to Dismiss, [8-2] motion to Transfer Venue {SEALED}. (nl) [Entry date 09/19/01]
9/18/01	407	Appendix to Brief Filed by Broadcom Corporation Appending [406-1] reply brief {SEALED}. (nl) [Entry date 09/19/01]
9/19/01	408	Steno Notes for 9/18/01; rprtr. K. Maurer (nl)
9/19/01	409	Letter from Christian Wright, Esq. to Judge McKelvie re expert reports. (nl) [Entry date 09/20/01]
9/19/01	410	Letter from J. Andrew Huffman, Esq. to Judge McKelvie re expert reports. (nl) [Entry date 09/20/01]
9/20/01	--	Tele-conference held; rprtr. K. Maurer (nl)
9/20/01	411	TRANSCRIPT filed [0-0] telephone conference for dates of 9/18/01 (nl)
9/21/01	412	Videotape filed by Intel Corporation {SEALED}. (nl)
9/21/01	413	Letter from J. Andrew Huffman, Esq. to Judge McKelvie re D.I. 412. (nl)
9/21/01	414	Answer Brief Filed by Intel Corporation to Broadcom's opening claim construction brief re '478 patent. (nl)
9/21/01	415	Answer Brief Filed by Intel Corporation to Broadcom's opening claim construction brief re '630 patent. (nl)
9/21/01	416	Answer Brief Filed by Intel Corporation in response to Broadcom's opening claim construction brief regarding claims 10, 21, 24 and 29 of the '410 patent {SEALED}. (nl) [Entry date 09/24/01]
9/21/01	417	Answer Brief Filed by Intel Corporation to Broadcom's opening claim construction brief regarding the '830 patent {SEALED}. (nl) [Entry date 09/24/01]
9/21/01	418	Proposed pre-trial order filed by Intel Corporation, Broadcom Corporation {SEALED}. (nl) [Entry date 09/24/01]
9/21/01	419	Answer Brief Filed by Intel Corporation to Broadcom's opening claim construction brief regarding the '201 patent {SEALED}. (nl) [Entry date 09/24/01]
9/21/01	420	Declaration of Dr. Brian Von Herzen in support of D.I. 419 {SEALED}. (nl) [Entry date 09/24/01]
9/21/01	421	Reply Claim Construction Brief Filed by Broadcom Corporation re claims 10, 21, 24 and 29 of the '410 patent. (nl) [Entry date 09/24/01]
9/21/01	422	Appendix to Brief Filed by Broadcom Corporation Appending [421-1] reply brief {SEALED}. (nl) [Entry date 09/24/01]
9/21/01	423	Reply Claim Construction Brief Filed by Broadcom

Corporation re claim 1 of the '630 patent. (nl) [Entry date 09/24/01]

9/21/01 424 Appendix to Brief Filed by Broadcom Corporation Appending [423-1] reply brief (nl) [Entry date 09/24/01]

9/21/01 425 Reply Claim Construction Brief Filed by Broadcom Corporation re claims 1 and 10 of the '201 patent {SEALED}. (nl) [Entry date 09/24/01]

9/21/01 426 Appendix to Brief Filed by Broadcom Corporation Appending [425-1] reply brief {SEALED}. (nl) [Entry date 09/24/01]

9/21/01 427 Reply Claim Construction Brief Filed by Broadcom Corporation re '830 patent {SEALED}. (nl) [Entry date 09/24/01]

9/21/01 428 Appendix to Brief Filed by Broadcom Corporation Appending [427-1] reply brief (nl) [Entry date 09/24/01]

9/21/01 429 Reply Claim Construction Brief Filed by Broadcom Corporation re claims 13, 15, 17, 23 and 24 of the '478 patent. (nl) [Entry date 09/24/01]

9/21/01 430 Appendix to Brief Filed by Broadcom Corporation Appending [429-1] reply brief (nl) [Entry date 09/24/01]

9/21/01 431 Steno Notes for 9/20/01; rprtr. K. Maurer (nl) [Entry date 09/24/01]

9/21/01 432 MOTION by Intel Corporation to Strike [406-1] reply brief, or for Leave to File Sur-Reply Brief {SEALED}. (nl) [Entry date 09/24/01]

9/21/01 433 MOTION by Intel Corporation with Proposed Order for Summary Judgment that Broadcom's infringing products are not licensed under the '830 and '410 patents Answer Brief due 10/5/01 re: [433-1] motion (nl) [Entry date 09/24/01]

9/21/01 434 Opening Brief Filed by Intel Corporation [433-1] motion for Summary Judgment that Broadcom's infringing products are not licensed under the '830 and '410 patents {SEALED}. (nl) [Entry date 09/24/01]

9/21/01 435 Appendix to Brief (vol. 1 of 2) Filed by Intel Corporation Appending [434-1] opening brief {SEALED}. (nl) [Entry date 09/24/01]

9/21/01 436 Appendix to Brief (vol. 2 of 2) Filed by Intel Corporation Appending [434-1] opening brief {SEALED}. (nl) [Entry date 09/24/01]

9/21/01 437 Opening Brief Filed by Broadcom Corporation in support of motion for partial summary judgment on Intel's failure to provide notice of alleged infringement {SEALED}. (nl) [Entry date 09/24/01]

9/21/01 438 Appendix to Brief Filed by Broadcom Corporation Appending [437-1] opening brief {SEALED}. (nl) [Entry date 09/24/01]

9/21/01 439 OPENING BRIEF filed by Broadcom Corporation for Partial Summary Judgment regarding the invention dates of the '830 and '410 patents Answer Brief due 10/5/01 re: [445-1] motion {SEALED}. (nl) [Entry date 09/24/01] [Edit date 09/25/01]

9/21/01	440	Appendix to Motion Filed by Broadcom Corporation Appending D.I. 439 {SEALED}. (nl) [Entry date 09/24/01]
9/21/01	441	Declaration of David Rosmann (nl) [Entry date 09/24/01]
9/24/01	--	Markman Hearing held; rprtr. V. Gunning (nl) [Entry date 09/25/01]
9/24/01	442	Letter from J. Andrew Huffman, Esq. to Clerk re exhibit 4 to D.I. 401. (nl) [Entry date 09/25/01]
9/25/01	--	Markman Hearing held; rprtr. V. Gunning (nl)
9/25/01	443	Letter dated 9/25/01 from Fish & Richardson to Clerk encl. exhibit A to Intel's answering brief to Broadcom's opening claim construction brief re '201 patent filed on 9/21/01 {SEALED}. (nl)
9/25/01	444	MOTION by Broadcom Corporation with Proposed Order for Partial Summary Judgment on Intel's failure to provide notice of alleged infringement Answer Brief due 10/5/01 re: [444-1] motion (See Opening Brief filed at D.I. 437). (nl) [Edit date 09/25/01]
9/25/01	445	MOTION by Broadcom Corporation with Proposed Order for Partial Summary Judgment regarding the invention dates of the '830 and '410 patents Answer Brief due 10/5/01 re: [445-1] motion (See Opening Brief filed at D.I. 439). (nl) [Edit date 09/25/01]
9/26/01	446	TRANSCRIPT filed [0-0] Markman hearing for dates of 9/24/01 (nl)
9/26/01	447	TRANSCRIPT filed [0-0] Markman hearing for dates of 9/25/01 (nl)
9/26/01	448	Letter from Christian D. Wright, Esq. to Clerk re corrected page 19 to D.I. 421. (nl)
9/27/01	449	CERTIFICATE OF SERVICE by Intel Corporation re expert report of Jeffrey S. Hamilton re infringement of '630 and '478 patents. (nl) [Entry date 09/28/01]
9/27/01	450	CERTIFICATE OF SERVICE by Intel Corporation re expert witness report of Larry S. Nixon. (nl) [Entry date 09/28/01]
9/27/01	451	CERTIFICATE OF SERVICE by Intel Corporation re expert report of Dr. James M. Pitarresi. (nl) [Entry date 09/28/01]
9/27/01	452	CERTIFICATE OF SERVICE by Intel Corporation re expert report of Michael W. Dini. (nl) [Entry date 09/28/01]
9/27/01	453	CERTIFICATE OF SERVICE by Intel Corporation re expert report of Dr. V. Thomas Rhyne. (nl) [Entry date 09/28/01]
9/27/01	454	CERTIFICATE OF SERVICE by Intel Corporation re expert report of Dr. Brian Von Herzen. (nl) [Entry date 09/28/01]
9/27/01	455	CERTIFICATE OF SERVICE by Intel Corporation re expert report of Brian Napper. (nl) [Entry date 09/28/01]
9/27/01	456	CERTIFICATE OF SERVICE by Intel Corporation re expert report of Dr. Frederick W. Scholl. (nl) [Entry date 09/28/01]

9/27/01	457	CERTIFICATE OF SERVICE by Intel Corporation re expert report of Dr. Richard A. Blanchard. (nl) [Entry date 09/28/01]
9/28/01	458	STIPULATION with proposed order for an extension of time re Comcast's response to Intel's motion to compel due 10/15/01. (nl)
9/28/01	459	MOTION by Intel Corporation with Proposed Order for Summary Judgment that Broadcom's infringing products are not licensed under the Motorola agreement Answer Brief due 10/12/01 re: [459-1] motion (nl) [Entry date 10/01/01]
9/28/01	460	Opening Brief Filed by Intel Corporation [459-1] motion for Summary Judgment that Broadcom's infringing products are not licensed under the Motorola agreement {SEALED}. (nl) [Entry date 10/01/01]
9/28/01	461	NOTICE pursuant to 35 U.S.C. sec. 282 by Broadcom Corporation (nl) [Entry date 10/01/01]
10/1/01	--	Tele-conference held; rprtr. V. Gunning (nl)
10/1/01	--	So Ordered granting [458-1] stipulation (signed by Judge Roderick R. McKelvie) Notice to all parties. (nl) [Entry date 10/02/01]
10/1/01	--	Deadline updated; reset Answer Brief Deadline to 10/15/01 re: [339-1] motion to Compel Comcast's deposition testimony and production of documents (nl) [Entry date 10/02/01]
10/2/01	462	TRANSCRIPT filed [0-0] telephone conference for dates of 10/1/01 (nl)
10/2/01	463	REVISED SCHEDULING ORDER setting Trial Date Deadline 10:00 11/27/01 (14 day jury) (signed by Judge Roderick R. McKelvie) copies to: cnsl. (nl)
10/4/01	464	Slides of Intel Corporation's Presentation at the Markman Hearing on September 24-25, 2001 {SEALED}. (nl) [Entry date 10/09/01]
10/4/01	465	Letter from J. Andrew Huffman, Esq. to Judge McKelvie re D.I. 464. (nl) [Entry date 10/09/01]
10/4/01	466	MOTION by Comcast Cable Commun with Proposed Order for Costs and Attorney Fees (nl) [Entry date 10/09/01]
10/5/01	467	MOTION by Intel Corporation with Proposed Order for Alexander J. Hadjis, Esq. to Appear Pro Hac Vice (nl) [Entry date 10/09/01]
10/5/01	468	STIPULATION with proposed order extending briefing schedule re Intel's answering briefs due 10/12/01. (nl) [Entry date 10/09/01]
10/5/01	469	STIPULATION with proposed order extending brief schedule re Broadcom's answering brief due 10/18/01. (nl) [Entry date 10/09/01]
10/9/01	--	So Ordered granting [467-1] motion for Alexander J. Hadjis, Esq. to Appear Pro Hac Vice granting [468-1] stipulation granting [469-1] stipulation (signed by Judge Roderick R. McKelvie) Notice to all parties. (nl)

[Entry date 10/10/01]

10/9/01 470 MEMORANDUM OPINION (signed by Judge Roderick R. McKelvie) copies to: cnsl. (nl) [Entry date 10/10/01]

10/9/01 471 ORDER denying [8-1] motion to Dismiss, denying [8-2] motion to Transfer Venue (signed by Judge Roderick R. McKelvie) copies to: cnsl. (nl) [Entry date 10/10/01]

10/10/01 -- Deadline updated; reset Answer Brief Deadline to 10/12/01 re: [445-1] motion for Partial Summary Judgment regarding the invention dates of the '830 and '410 patents, 10/12/01 re: [444-1] motion for Partial Summary Judgment on Intel's failure to provide notice of alleged infringement, and reset Answer Brief Deadline to 10/18/01 re: [459-1] motion for Summary Judgment that Broadcom's infringing products are not licensed under the Motorola agreement (nl)

10/11/01 472 RESPONSE by Broadcom Corporation to [466-1] motion for Costs and Attorney Fees (nl) [Entry date 10/12/01]

10/12/01 473 MOTION by Broadcom Corporation for Continuance of summary judgment proceedings, and to Compel further responses Answer Brief due 10/26/01 re: [473-1] motion, Answer Brief due 10/26/01 re: [473-2] motion (nl)

10/12/01 474 Opening Brief Filed by Broadcom Corporation [473-1] motion for Continuance of summary judgment proceedings, [473-2] motion to Compel further responses {SEALED}. (nl) [Edit date 10/19/01]

10/12/01 475 Appendix to Brief Filed by Broadcom Corporation Appending [474-1] opening brief {SEALED}. (nl)

10/12/01 476 Answer Brief Filed by Broadcom Corporation [433-1] motion for Summary Judgment that Broadcom's infringing products are not licensed under the '830 and '410 patents - Reply Brief due 10/19/01 {SEALED}. (nl) [Edit date 10/19/01]

10/12/01 477 Appendix to Brief Filed by Broadcom Corporation Appending [476-1] answer brief {SEALED}. (nl)

10/12/01 478 Expert Report of Mark Frappier (nl)

10/12/01 479 Declaration of Mark Frappier (nl)

10/12/01 480 Declaration of David Dull (nl)

10/12/01 481 Declaration of Vafa James Rakshani (nl)

10/12/01 482 Declaration of David S. Steuer (nl)

10/12/01 483 Answer Brief Filed by Intel Corporation [445-1] motion for Partial Summary Judgment regarding the invention dates of the '830 and '410 patents - Reply Brief due 10/19/01 {SEALED}. (nl) [Entry date 10/15/01]

10/12/01 484 Appendix to Brief Filed by Intel Corporation Appending [483-1] answer brief {SEALED}. (nl) [Entry date 10/15/01]

10/12/01 485 Declaration of Michael Barrow in support of D.I. 483 {SEALED}. (nl) [Entry date 10/15/01]

10/12/01 486 Declaration of K. Bradford Romney in support of D.I. 483 {SEALED}. (nl) [Entry date 10/15/01]

10/12/01 487	Declaration of George E. Gerpheide in support of D.I. 483 {SEALED}. (nl) [Entry date 10/15/01]
10/12/01 488	Answer Brief Filed by Intel Corporation [444-1] motion for Partial Summary Judgment on Intel's failure to provide notice of alleged infringement - Reply Brief due 10/19/01 {SEALED}. (nl) [Entry date 10/15/01]
10/12/01 489	Appendix to Brief (vol. 1 of 2) Filed by Intel Corporation Appending [488-1] answer brief {SEALED}. (nl) [Entry date 10/15/01]
10/12/01 490	Appendix to Brief (vol. 2 of 2) Filed by Intel Corporation Appending [488-1] answer brief {SEALED}. (nl) [Entry date 10/15/01]
10/16/01 491	MOTION by Intel Corporation with Proposed Order for Summary Judgment that Broadcom's infringing products are not licensed under Intel's agreements with Sony, NEC, Samsung, Siemens, and Compaq Answer Brief due 10/30/01 re: [491-1] motion (nl) [Entry date 10/17/01]
10/16/01 492	Opening Brief Filed by Intel Corporation [491-1] motion for Summary Judgment that Broadcom's infringing products are not licensed under Intel's agreements with Sony, NEC, Samsung, Siemens, and Compaq {SEALED}. (nl) [Entry date 10/17/01]
10/16/01 493	Appendix to Brief Filed by Intel Corporation Appending [492-1] opening brief {SEALED}. (nl) [Entry date 10/17/01]
10/16/01 494	STIPULATION with proposed order for an extension of time for Comcast Cable to respond to Intel's motion to compel by 10/24/01. (nl) [Entry date 10/18/01]
10/18/01 495	CROSS MOTION by Broadcom Corporation with Proposed Order for Summary Judgment that Broadcom's allegedly infringing products are licensed under the Motorola Agreement Answer Brief due 11/1/01 re: [495-1] motion (nl) [Entry date 10/19/01]
10/18/01 496	Opening Brief Filed by Broadcom Corporation [495-1] motion for Summary Judgment that Broadcom's allegedly infringing products are licensed under the Motorola Agreement {SEALED}. (nl) [Entry date 10/19/01]
10/18/01 496	Answer Brief Filed by Broadcom Corporation [459-1] motion for Summary Judgment that Broadcom's infringing products are not licensed under the Motorola agreement - Reply Brief due 10/25/01 {SEALED}. (nl) [Entry date 10/19/01]
10/18/01 497	Appendix to Brief Filed by Broadcom Corporation Appending [496-1] answer brief, [496-1] opening brief {SEALED}. (nl) [Entry date 10/19/01]
10/18/01 --	So Ordered granting [494-1] stipulation (signed by Judge Roderick R. McKelvie) Notice to all parties. (nl) [Entry date 10/19/01]
10/18/01 498	CORRECTED Answer Brief Filed by Broadcom Corporation [433-1] motion for Summary Judgment that Broadcom's infringing products are not licensed under the '830 and '410 patents (replacing D.I. 476) {SEALED}. (nl) [Entry date 10/19/01]

10/18/01 499	Letter from John Paschetto, Esq. to Clerk re D.I. 474 and 476 should be filed under seal. (nl) [Entry date 10/19/01]
10/19/01 --	Deadline updated; reset Answer Brief Deadline to 10/24/01 re: [339-1] motion to Compel Comcast's deposition testimony and production of documents (nl)
10/19/01 500	Reply Brief Filed by Broadcom Corporation [444-1] motion for Partial Summary Judgment on Intel's failure to provide notice of alleged infringement {SEALED}. (nl) [Entry date 10/22/01]
10/19/01 501	Answer Brief Filed by Intel Corporation [473-1] motion for Continuance of summary judgment proceedings - Reply Brief due 10/26/01, [473-2] motion to Compel further responses - Reply Brief due 10/26/01 {SEALED}. (nl) [Entry date 10/22/01]
10/19/01 502	Appendix to Brief Filed by Intel Corporation Appending [501-1] answer brief {SEALED}. (nl) [Entry date 10/22/01]
10/22/01 503	Reply Brief Filed by Intel Corporation [433-1] motion for Summary Judgment that Broadcom's infringing products are not licensed under the '830 and '410 patents {SEALED}. (nl)
10/22/01 504	Appendix to Brief Filed by Intel Corporation Appending [503-1] reply brief {SEALED}. (nl)
10/22/01 505	Reply Brief Filed by Broadcom Corporation [445-1] motion for Partial Summary Judgment regarding the invention dates of the '830 and '410 patents {SEALED}. (nl)
10/22/01 506	Appendix to Brief Filed by Broadcom Corporation Appending [505-1] reply brief {SEALED}. (nl)
10/22/01 507	STIPULATION with proposed order extending time to file reply briefs by 10/22/01. (nl) [Entry date 10/23/01]
10/23/01 --	So Ordered granting [507-1] stipulation (signed by Judge Roderick R. McKelvie) Notice to all parties. (nl) [Entry date 10/24/01]
10/23/01 508	ANSWER to complaint and COUNTERCLAIM by Broadcom Corporation against Intel Corporation {SEALED}. (nl) [Entry date 10/24/01]
10/24/01 509	Letter from Vera Elson, Esq. to Judge McKelvie re request for a conference to discuss discovery issues. (nl)
10/24/01 --	WITHDRAWAL of [466-1] motion for Costs and Attorney Fees (nl) [Entry date 10/25/01]
10/24/01 510	Withdrawal of Motion for Costs (D.I. 466) by Comcast Cable Commun (nl) [Entry date 10/25/01]
10/24/01 511	ORIGINAL Declaration of George E. Gerpheide in support of Intel's answering brief in opposition to Broadcom's motion for partial summary judgment regarding the invention dates of the '830 and '410 patents (replacing D.I. 487) {SEALED}. (nl) [Entry date 10/25/01]
10/24/01 512	Letter from J. Andrew Huffman, Esq. to Clerk re D.I. 511. (nl) [Entry date 10/25/01]

10/25/01	513	FIRST AMENDED ANSWER to Complaint and COUNTERCLAIM by Broadcom Corporation : amends [508-1] answer {SEALED}. (nl)
10/25/01	514	Letter from J. Andrew Huffman, Esq. to Judge McKelvie re response to Broadcom's letter dated 10/24/01. (nl)
10/25/01	515	Reply Brief Filed by Intel Corporation [459-1] motion for Summary Judgment that Broadcom's infringing products are not licensed under the Motorola agreement {SEALED}. (nl) [Entry date 10/26/01]
10/25/01	515	Answer Brief Filed by Intel Corporation [495-1] motion for Summary Judgment that Broadcom's allegedly infringing products are licensed under the Motorola Agreement - Reply Brief due 11/1/01 {SEALED}. (nl) [Entry date 10/26/01]
10/25/01	516	Appendix to Brief Filed by Intel Corporation Appending [515-1] answer brief, [515-1] reply brief {SEALED}. (nl) [Entry date 10/26/01]
10/25/01	--	WITHDRAWAL of [339-1] motion to Compel Comcast's deposition testimony and production of documents (nl) [Entry date 10/26/01]
10/25/01	517	Withdrawal of motion to compel (D.I. 339) by Intel Corporation (nl) [Entry date 10/26/01]
10/26/01	518	NOTICE pursuant to 35 U.S.C. sec. 282 by Broadcom Corporation (nl)
10/26/01	519	Reply Brief Filed by Broadcom Corporation [473-1] motion for Continuance of summary judgment proceedings, [473-2] motion to Compel further responses {SEALED}. (nl)
10/26/01	520	Appendix to Brief Filed by Broadcom Corporation Appending [519-1] reply brief {SEALED}. (nl)
10/29/01	521	Letter from John Shaw, Esq. to Judge McKelvie re 10/19/01 letter from Intel's counsel to Broadcom. (nl) [Entry date 10/30/01]
10/30/01	522	CROSS-MOTION by Broadcom Corporation with Proposed Order for Summary Judgment of non-infringement with respect to sales to Intel licensees Answer Brief due 11/13/01 re: [522-1] motion (nl) [Entry date 10/31/01]
10/30/01	523	Opening Brief Filed by Broadcom Corporation [522-1] motion for Summary Judgment of non-infringement with respect to sales to Intel licensees {SEALED}. (nl) [Entry date 10/31/01]
10/30/01	523	Answer Brief Filed by Broadcom Corporation [491-1] motion for Summary Judgment that Broadcom's infringing products are not licensed under Intel's agreements with Sony, NEC, Samsung, Siemens, and Compaq - Reply Brief due 11/6/01 {SEALED}. (nl) [Entry date 10/31/01]
10/30/01	524	Appendix to Brief Filed by Broadcom Corporation Appending [523-1] answer brief, [523-1] opening brief {SEALED}. (nl) [Entry date 10/31/01]
10/31/01	--	Tele-conference held; rprtr. K. Maurer (nl) [Entry date 11/01/01]
11/1/01	525	Reply Brief Filed by Broadcom Corporation [495-1] motion

		for Summary Judgment that Broadcom's allegedly infringing products are licensed under the Motorola Agreement {SEALED}. (nl) [Entry date 11/02/01]
11/1/01	526	Objection by Broadcom Corporation to Evidence Offered by Intel in their [515-1] answer brief, [515-1] reply brief (nl) [Entry date 11/02/01]
11/2/01	527	Steno Notes for 10/31/01; rprtr. K. Maurer (nl)
11/2/01	528	TRANSCRIPT filed [0-0] telephone conference for dates of 10/31/01 (nl) [Entry date 11/05/01]
11/2/01	529	Letter from William Marsden, Esq. to Judge McKelvie re cross motions for summary judgment on license issues. (nl) [Entry date 11/05/01]
11/2/01	530	Letter dated 11/1/01 from Richard Morse, Esq. to Judge McKelvie re proposed revised scheduling order. (nl) [Entry date 11/06/01]
11/5/01	531	Letter from William Marsden, Esq. to Judge McKelvie re response to Broadcom's 11/2/01 letter and proposed order. (nl) [Entry date 11/06/01]
11/6/01	532	MEMORANDUM OPINION re asserted claims of the '830 patent (signed by Judge Roderick R. McKelvie copies to: cnsl. (nl)
11/6/01	533	MEMORANDUM OPINION re claims 1 and 10 of the '201 patent (signed by Judge Roderick R. McKelvie copies to: cnsl. (nl)
11/6/01	534	Broadcom's expert report of Alan J. Cox, Ph.D. {SEALED}. (nl)
11/6/01	535	Broadcom's expert report of Professor Bernd Girod regarding the non-infringement of the BCM7010 and the BCM7020 {SEALED}. (nl)
11/6/01	536	Broadcom's expert report of Fouad A. Tobagi regarding infringement of the '830 patent {SEALED}. (nl)
11/6/01	537	Letter dated 11/5/01 from Richard Morse, Esq. to Judge McKelvie re Broadcom's expert reports. (nl)
11/6/01	538	Letter from J. Andrew Huffman, Esq. to Judge McKelvie re Intel's rebuttal expert reports. (nl)
11/6/01	539	Reply Brief Filed by Intel Corporation [491-1] motion for Summary Judgment that Broadcom's infringing products are not licensed under Intel's agreements with Sony, NEC, Samsung, Siemens, and Compaq {SEALED}. (nl) [Entry date 11/07/01]
11/6/01	539	Answer Brief Filed by Intel Corporation [522-1] motion for Summary Judgment of non-infringement with respect to sales to Intel licensees - Reply Brief due 11/13/01 {SEALED}. (nl) [Entry date 11/07/01]
11/6/01	540	Appendix to Brief Filed by Intel Corporation Appending [539-1] answer brief, [539-1] reply brief {SEALED}. (nl) [Entry date 11/07/01]
11/7/01	541	CERTIFICATE OF SERVICE by Intel Corporation re rebuttal expert reports of M. Dini, T. Ryhne, J. Hamilton and B. on Herzen. (nl)

11/7/01	542	Amended NOTICE by Intel Corporation to take deposition of Henry Samueli on 11/1/01 (nl)
11/7/01	543	Second Amended NOTICE by Intel Corporation to take deposition of Martin Colombatto on 10/30/01 (nl)
11/7/01	544	Amended NOTICE by Intel Corporation to take deposition of Henry T. Nicholas III on 11/6/01 (nl)
11/7/01	545	Letter from J. Andrew Huffman, Esq. to Clerk re tab 17 to volume 1 appendix (D.I. 435). (nl) [Entry date 11/08/01]
11/7/01	546	Letter dated 11/6/01 from Fish & Richardson to Clerk re original signature page to D.I. 516 {SEALED}. (nl) [Entry date 11/08/01]
11/13/01	547	Updated expert report of Brian W. Napper submitted with letter to Judge McKelvie dated 11/13/01 {SEALED}. (nl)
11/13/01	548	MOTION by Brqadcom Corporation for leave to Amend its affirmative defenses {SEALED}. (nl)
11/13/01	--	Tele-conference held; rprtr. K. Maurer (nl)
11/13/01	549	Steno Notes for 11/13/01; rprtr. K. Maurer (nl)
11/13/01	550	STIPULATION with proposed order extending time re Intel's response to Broadcom's first amended answer and counterclaims due 12/21/01. (nl)
11/13/01	551	Reply Brief Filed by Broadcom Corporation [522-1] motion for Summary Judgment of non-infringement with respect to sales to Intel licensees {SEALED}. (nl) [Entry date 11/14/01]
11/13/01	552	NOTICE by Intel Corporation to take deposition of David Dull on 11/19/01 (nl) [Entry date 11/14/01]
11/13/01	553	Amended NOTICE by Intel Corporation to take deposition of Mark Frappier on 11/14/01 (nl) [Entry date 11/14/01]
11/13/01	554	NOTICE by Intel Corporation to take deposition of Vafa Rakshani on 11/8/01 (nl) [Entry date 11/14/01]
11/13/01	555	Amended NOTICE by Intel Corporation to take deposition of Vafa Rakshani on 11/13/01 (nl) [Entry date 11/14/01]
11/14/01	--	So Ordered granting [550-1] stipulation (signed by Judge Roderick R. McKelvie) Notice to all parties. (nl)
11/15/01	556	TRANSCRIPT filed [0-0] telephone conference for dates of 11/13/01 (nl)
11/19/01	557	Letter from William Marsden, Esq. to Judge McKelvie re jury questionnaire. (nl) [Entry date 11/20/01]
11/20/01	558	MEMORANDUM OPINION (signed by Judge Roderick R. McKelvie) copies to: cnsl. (nl)
11/20/01	559	ORDER granting [433-1] motion for Summary Judgment that Broadcom's infringing products are not licensed under the '830 and '410 patents; granting [459-1] motion for Summary Judgment that Broadcom's infringing products are not licensed under the Motorola agreement; denying [495-1] motion for Summary Judgment that Broadcom's allegedly

	infringing products are licensed under the Motorola Agreement; granting in part, denying in part [491-1] motion for Summary Judgment that Broadcom's infringing products are not licensed under Intel's agreements with Sony, NEC, Samsung, Siemens, and Compaq; denying [522-1] motion for Summary Judgment of non-infringement with respect to sales to Intel licensees (signed by Judge Roderick R. McKelvie) copies to: cnsl. (nl)
11/20/01 560	STIPULATION with proposed order amending protective order. (nl) [Entry date 11/21/01]
11/21/01 --	So Ordered granting [560-1] stipulation (signed by Judge Roderick R. McKelvie) Notice to all parties. (nl)
11/21/01 561	MOTION by Broadcom Corporation with Proposed Order for Reconsideration and/or reargument of [559-1] order (nl) [Entry date 11/26/01]
11/23/01 562	Proposed pre-trial order (vol. 1 of 2) filed by Intel Corporation, Broadcom Corporation {SEALED}. (nl) [Entry date 11/26/01]
11/23/01 563	Proposed pre-trial order (vol. 2 of 2) filed by Intel Corporation, Broadcom Corporation {SEALED}. (nl) [Entry date 11/26/01]
11/23/01 564	Proposed Verdict Sheet filed by Intel Corporation (nl) [Entry date 11/26/01]
11/23/01 565	Proposed Supplemental Voir dire questions by Intel Corporation (nl) [Entry date 11/26/01]
11/23/01 566	Opposition by Intel Corporation to Broadcom's motions in limine nos. 1-12. (nl) [Entry date 11/26/01]
11/23/01 567	Objections by Broadcom Corporation to Intel's designation of deposition testimony. (nl) [Entry date 11/26/01]
11/23/01 568	Letter from William Marsden, Esq. to Judge McKelvie re reduced deposition designations of Intel. (nl) [Entry date 11/26/01]
11/23/01 569	Letter from William Marsden, Esq. to Judge McKelvie re proposed jury instructions. (nl) [Entry date 11/26/01]
11/23/01 570	Letter from William Marsden, Esq. to Judge McKelvie re Intel's response to misc. issues in pretrial order. (nl) [Entry date 11/26/01]
11/23/01 571	Letter RESPONSE by Intel Corporation to [561-1] motion for Reconsideration and/or reargument of [559-1] order (nl) [Entry date 11/26/01]
11/26/01 --	Pre-trial conference held; rprtr. V. Gunning (nl)
11/26/01 572	Proposed Preliminary Jury instructions by Intel Corporation (nl)
11/26/01 573	Proposed Preliminary Jury instructions by Intel Corporation (black-lined to show changes requested by Broadcom). (nl)
11/26/01 574	Proposed Final Jury instructions by Intel Corporation (nl)
11/26/01 575	Proposed Final Jury instructions by Intel Corporation

	(black-lined to show changes requested by Broadcom). (nl)
11/26/01 576	Proposed Final Jury instructions by Broadcom Corporation (nl)
11/26/01 577	Proposed Preliminary Jury instructions by Broadcom Corporation (nl)
11/26/01 578	Proposed Supplemental Voir dire questions by Broadcom Corporation (nl)
11/26/01 579	Proposed Verdict Sheet filed by Broadcom Corporation (nl)
11/26/01 580	CERTIFICATE OF SERVICE by Broadcom Corporation re D.I. 576-579. (nl)
11/26/01 581	MOTION by Intel Corporation with Proposed Order for Kelvin Hartwell-Beal, Esq. to Appear Pro Hac Vice (nl)
11/27/01 582	Joint Proposed Verdict Sheet filed by Intel Corporation, Broadcom Corporation (nl)
11/27/01 583	Joint Proposed Preliminary Jury instructions by Intel Corporation, Broadcom Corporation (nl)
11/27/01 584	Joint Supplemental Proposed Voir dire questions by Intel Corporation, Broadcom Corporation (nl)
11/27/01 585	Letter from William Marsden, Esq. to Judge McKelvie re D.I. 582-584. (nl)
11/27/01 586	Joint Preliminary Proposed Jury instructions by Intel Corporation, Broadcom Corporation (nl)
11/27/01 587	Letter from William Marsden, Esq. to Judge McKelvie re D.I. 586. (nl)
11/27/01 588	Letter from William Marsden, Esq. to Judge McKelvie re suppl. expert report of Brian Napper and the addendum to expert report of Dr. Brian Von Herzen. (nl)
11/27/01 589	CERTIFICATE OF SERVICE by Intel Corporation re subpoena for Alan Cox. (nl)
11/27/01 590	CERTIFICATE OF SERVICE by Intel Corporation re addendum to expert report of Dr. Brian Von Herzen. (nl)
11/27/01 591	CERTIFICATE OF SERVICE by Intel Corporation re updated expert report of Brian Napper. (nl)
11/28/01 --	Jury trial held (day 1); rprtrs. Maurer, Gaffigan (nl)
11/28/01 --	So Ordered granting [581-1] motion for Kelvin Hartwell-Beal, Esq. to Appear Pro Hac Vice (signed by Judge Roderick R. McKelvie) Notice to all parties. (nl)
11/28/01 592	Proposed Verdict Sheet filed by Intel Corporation, Broadcom Corporation (nl) [Entry date 11/29/01]
11/28/01 593	Preliminary Jury instructions by Judge McKelvie (nl) [Entry date 11/29/01]
11/28/01 594	Answer Brief Filed by Intel Corporation [548-1] motion for leave to Amend its affirmative defenses {SEALED}. (nl) [Entry date 11/29/01]

11/29/01	--	Jury trial held (day 2); rprtrs. Gunning, Dibbs (nl)
11/29/01	595	Steno Notes for 11/28/01; rprtr. B. Gaffigan (nl)
11/29/01	596	Letter from William Marsden, Esq. to Judge McKelvie re Mr. Kohagen. (nl)
11/29/01	597	Letter from William Marsden, Esq. to Judge McKelvie re Intel's motion in limine #3. (nl)
11/29/01	598	Letter from William Marsden, Esq. to Judge McKelvie re Intel's counter-designations of depositions designated by Broadcom. (nl)
11/29/01	599	Letter from William Marsden, Esq. to Judge McKelvie re deposition transcripts of Craig Barrett and Mark Christensen. (nl)
11/30/01	600	Letter from Irwin Gross, Esq. to Judge McKelvie re identifying trial witnesses. (nl)
11/30/01	601	Letter from William Marsden, Esq. to Judge McKelvie re Intel's motion in limine #9. (nl)
11/30/01	602	Letter from William Marsden, Esq. to Judge McKelvie re 7010 and 7020 chips. (nl)
11/30/01	603	MOTION by Broadcom Corporation with Proposed Order for Ulrico S. Rosales, Esq. to Appear Pro Hac Vice (nl)
11/30/01	--	Jury trial held (day 3); rprtr. Maurer, Gaffigan (nl) [Entry date 12/03/01]
12/3/01	--	Jury trial held (day 4); rprtr. Gunning, Dibbs (nl)
12/3/01	604	Letter from R.V. Lupo, Esq. to Judge McKelvie re response to Intel's letter dated 11/29/01 related to Intel deliverables. (nl)
12/3/01	605	Steno Notes for 11/30/01; rprtr. B. Gaffigan (nl)
12/3/01	606	MOTION by Broadcom Corporation to exclude testimony of Brian Napper {SEALED}. (nl)
12/3/01	607	Appendix to Motion Filed by Broadcom Corporation Appending D.I. 606 {SEALED}. (nl)
12/3/01	608	Letter from William Marsden, Esq. to Judge McKelvie re testimony of Dr. Henry Nicholas and Dr. Henry Samueli. (nl)
12/3/01	609	Letter from William Marsden, Esq. to Judge McKelvie re response to Broadcom's request for reconsideration of the 11/20/01 order. (nl)
12/3/01	610	Letter from Karen Jennings, Esq. to Judge McKelvie re response to Intel's 11/30/01 letter regarding Intel's motion in limine. (nl)
12/3/01	611	Broadcom's revised counter-designation of deposition testimony to Intel's 11/21/01 designation of deposition testimony. (nl)
12/3/01	--	So Ordered granting [603-1] motion for Ulrico S. Rosales, Esq. to Appear Pro Hac Vice (signed by Judge Roderick R. McKelvie) Notice to all parties. (nl)

12/3/01	612	Updated supplemental expert report of Alan J. Cox, Ph.D. {SEALED}. (nl)
12/4/01	--	Jury trial held (day 5); rprtr. Maurer, Gaffigan (nl)
12/4/01	613	Revised Objections by Broadcom Corporation to Intel's 11/21/01 designation of deposition testimony. (nl)
12/4/01	614	Broadcom's revised designation of deposition testimony. (nl)
12/4/01	615	Letter from R.V. Lupo, Esq. to Judge McKelvie re Intel deliverables and auto-negotiation code. (nl)
12/4/01	616	Letter from William Marsden, Esq. to Judge McKelvie re Broadcom's latest subpoena of Brian Napper. (nl)
12/4/01	617	Letter from William Marsden, Esq. to Judge McKelvie re Broadcom-Dayna documents. (nl)
12/4/01	618	Letter from William Marsden, Esq. to Judge McKelvie re admissibility of evidence related to Intel deliverables. (nl)
12/4/01	619	Letter from William Marsden, Esq. to Judge McKelvie re Court's claim construction of the '830 patent. (nl) [Entry date 12/05/01]
12/5/01	--	Jury trial held (day 6); rprtr. Gunning, Dibbs (nl)
12/5/01	620	Steno Notes for 12/4/01; rprtr. B. Gaffigan (nl)
12/5/01	621	Letter from William Marsden, Esq. to Judge McKelvie re Dr. Crayford. (nl)
12/5/01	622	Letter from William Marsden, Esq. to Judge McKelvie re Mark Frappier. (nl)
12/5/01	623	Letter from William Marsden, Esq. to Judge McKelvie re Broadcom stipulations on infringing products. (nl)
12/5/01	624	Letter from William Marsden, Esq. to Judge McKelvie re testimony of Amber Trevaskis. (nl)
12/5/01	625	MOTION by Broadcom Corporation with Proposed Order in Limine regarding Mark Christensen (nl)
12/5/01	626	MOTION by Broadcom Corporation with Proposed Order in Limine regarding Stephen M. McConnell (nl)
12/5/01	627	Letter from Terrence McMahon, Esq. to Judge McKelvie re response to Intel's letter dated 12/4/01 related to Dayna Communications. (nl)
12/5/01	628	Letter from R.V. Lupo, Esq. to Judge McKelvie re Intel deliverables. (nl)
12/5/01	629	Reply Brief Filed by Broadcom Corporation [548-1] motion for leave to Amend its affirmative defenses (nl) [Entry date 12/06/01]
12/6/01	630	Letter from William Marsden, Esq. to Judge McKelvie re testimony by Mark Kohagen. (nl)
12/6/01	631	Letter from William Marsden, Esq. to Judge McKelvie re issue of inequitable conduct. (nl)

12/6/01	632	Letter from William Marsden, Esq. to Judge McKelvie re 1995 Intel/Broadcom agreement. (nl)
12/6/01	633	Letter from William Marsden, Esq. to Judge McKelvie re Dr. Crayford's testimony. (nl)
12/6/01	634	Letter from William Marsden, Esq. to Judge McKelvie re the TOPS article. (nl)
12/6/01	635	MOTION by Broadcom Corporation with Proposed Order for Judgment as a Matter of Law for failure to prove willful infringement and Request for Expedited Consideration. (nl)
12/6/01	636	ORDER re lunch for jury on 12/6/01 (signed by Judge Roderick R. McKelvie) copies to: financial admin. (nl)
12/6/01	--	Jury trial held (day 7); rprtrs. Maurer, Gaffigan (nl)
12/6/01	637	MEMORANDUM OPINION re supplemental claim construction (signed by Judge Roderick R. McKelvie copies to: cnsl. (nl) [Entry date 12/07/01]
12/7/01	--	Jury trial held (day 8); rprtrs. Gunning, Dibbs (nl)
12/7/01	638	RESPONSE by Intel Corporation to [635-1] motion for Judgment as a Matter of Law for failure to prove willful infringement (nl)
12/7/01	639	Letter from William Marsden, Esq. to Judge McKelvie re Broadcom's opening statement. (nl)
12/7/01	640	Letter from R.V. Lupo, Esq. to Judge McKelvie re request for reconsideration of the Court's supplemental claim construction. (nl)
12/7/01	641	Letter from Terrence McMahon, Esq. to Judge McKelvie re C. Barrett and M. Christensen deposition testimony. (nl)
12/7/01	642	Letter from Ron Shulman, Esq. to Judge McKelvie re Broadcom's motions for judgment as a matter of law. (nl)
12/7/01	643	Steno Notes for 12/6/01; rprtr. B. Gaffigan (nl)
12/10/01	--	Jury trial held (day 9); rprtrs. Maurer, Gaffigan (nl)
12/10/01	644	Proposed Final Jury instructions by Intel Corporation (nl)
12/10/01	645	Joint Proposed Final Jury instructions (black-lined to identify instructions on which the parties disagree) by Intel Corporation, Broadcom Corporation (nl)
12/10/01	646	Letter from William Marsden, Esq. to Judge McKelvie re proposed final jury instructions. (nl)
12/10/01	647	Letter from William Marsden, Esq. to Judge McKelvie re Dr. Tobagi's testimony. (nl)
12/10/01	648	Letter from William Marsden, Esq. to Judge McKelvie re Federal Circuit decision in Crystal Semiconductor. (nl)
12/10/01	649	Letter from William Marsden, Esq. to Judge McKelvie re Mark Kohagen. (nl)
12/10/01	650	Letter from William Marsden, Esq. to Judge McKelvie re Chen

	and Pratt article. (nl)
12/10/01 651	Letter from Ariana Chung-Han, Esq. to Judge McKelvie re final jury instructions. (nl)
12/10/01 652	Letter from Irwin Gross, Esq. to Judge McKelvie re Daniel Lee. (nl)
12/10/01 653	Letter from Irwin Gross, Esq. to Judge McKelvie re 12/6/01 memorandum opinion on claim construction. (nl)
12/10/01 654	Letter from Irwin Gross, Esq. to Judge McKelvie re Intel's cross-examination of Dr. Tobagi. (nl)
12/10/01 655	Proposed Final Jury instructions by Broadcom Corporation (nl)
12/10/01 656	Joint Proposed Final Jury instructions: black-lined to identify instructions on which the parties disagree by Intel Corporation, Broadcom Corporation (nl)
12/10/01 657	Letter from R.V. Lupo, Esq. to Judge McKelvie re Intel's willful infringement claim. (nl)
12/10/01 658	Letter dated 12/10/01 from Terrence McMahon, Esq. to Judge McKelvie {SEALED}. (nl)
12/11/01 --	Jury trial held (day 10); rprtrs. Gunning, Dibbs (nl)
12/11/01 659	Letter from William Marsden, Esq. to Judge McKelvie re testimony from Mr. Lee regarding FlashTalk/FlashCard. (nl)
12/11/01 660	Letter from William Marsden, Esq. to Judge McKelvie re proposed jury instructions. (nl)
12/11/01 661	Letter from William Marsden, Esq. to Judge McKelvie re testimony by Dr. Cox. (nl)
12/11/01 662	Letter from William Marsden, Esq. to Judge McKelvie re testimony regarding Intel's third party licenses. (nl)
12/11/01 663	Steno Notes for 12/10/01; rprtr. B. Gaffigan (nl)
12/11/01 664	Letter from Irwin Gross, Esq. to Judge McKelvie re Broadcom's revised proposed verdict form. (nl)
12/11/01 665	Revised Proposed Verdict Sheet filed by Broadcom Corporation (nl)
12/11/01 666	Revised Proposed Verdict Sheet filed by Broadcom Corporation (black-lined to show Broadcom's proposed revisions). (nl)
12/12/01 --	Jury trial held (day 11); rprtrs. Maurer, Gaffigan (nl)
12/12/01 667	Revised Proposed Verdict Sheet filed by Broadcom Corporation (nl)
12/12/01 668	Letter from David Steuer, Esq. to Judge McKelvie re statement of the law regarding "have made" rights. (nl)
12/12/01 669	Letter from William Marsden, Esq. to Judge McKelvie re request that the Court grant JMOL and not submit Broadcom's "third-party" license defense to the jury. (nl)
12/12/01 670	Letter from William Marsden, Esq. to Judge McKelvie re

	non-disclosure of FlashTalk to the Patent Office. (nl)
12/12/01 671	Letter from William Marsden, Esq. to Judge McKelvie re request to strike testimony of Gary Huff. (nl)
12/12/01 672	Letter from William Marsden, Esq. to Judge McKelvie re request to strike portions of Ray Vincent's testimony on 12/11/01. (nl)
12/12/01 673	Letter from William Marsden, Esq. to Judge McKelvie re judgment as a matter of law on claims 1 and 10 of the '201 patent. (nl)
12/12/01 674	MOTION by Intel Corporation for Judgment as a Matter of Law at the close of Broadcom's case (nl)
12/12/01 675	Letter from William Marsden, Esq. to Judge McKelvie re motion for judgment as a matter of law on the validity of the '830 patent (for obviousness). (nl)
12/12/01 676	Intel's contentions for final jury instructions. (nl)
12/12/01 677	Letter from William Marsden, Esq. to Clerk re corrected page 5 to D.I. 676. (nl)
12/12/01 678	MOTION by Broadcom Corporation with Proposed Order for Leave to Conform the pleadings to the evidence or in the alternative to add paragraphs 60A to 60J to the second amended complaint (nl)
12/13/01 --	Jury trial held (day 12); rprtr. Gunning, Dibbs (nl)
12/13/01 679	Steno Notes for 12/12/01; rprtr. B. Gaffigan (nl)
12/13/01 680	MOTION by Intel Corporation for Judgment as a Matter of Law at the close of Broadcom's case regarding damages (nl)
12/13/01 681	Letter from William Marsden, Esq. to Judge McKelvie re stipulation read into the record (PTX 1598). (nl)
12/13/01 682	Letter from William Marsden, Esq. to Judge McKelvie re Gary Huff's testimony. (nl)
12/13/01 683	Intel's amended contentions for final jury instructions (nl)
12/13/01 684	Broadcom's contentions for final jury instructions (nl)
12/13/01 685	ORDER re lunch for jury on 12/12/01 (signed by Judge Roderick R. McKelvie) copies to: financial admin. (nl) [Entry date 12/14/01]
12/13/01 686	Proposed Verdict Sheet filed by Intel Corporation, Broadcom Corporation (nl) [Entry date 12/14/01]
12/13/01 687	Jury note filed (nl) [Entry date 12/14/01]
12/13/01 688	Broadcom's amended contentions for final jury instructions. (nl) [Entry date 12/14/01]
12/13/01 689	Final Jury instructions by Judge McKelvie (nl) [Entry date 12/17/01]
12/14/01 --	Jury trial held (day 13); rprtr. V. Gunning (nl)
12/14/01 690	Letter from William Marsden, Esq. to Judge McKelvie encl.

	Intel's amended contentions for final jury instructions. (nl) [Entry date 12/17/01]
12/14/01 691	ORDER re lunch for jury on 12/14/01 (signed by Judge Roderick R. McKelvie) copies to: financial admin. (nl) [Entry date 12/17/01]
12/14/01 692	JURY VERDICT for Broadcom Corporation (nl) [Entry date 12/17/01]
12/18/01 693	TRANSCRIPT filed [0-0] pre-trial conference for dates of 11/26/01 (nl)
12/18/01 694	TRANSCRIPT filed [0-0] jury trial for dates of 11/28/01 (nl)
12/18/01 695	TRANSCRIPT filed [0-0] jury trial for dates of 11/29/01 (nl)
12/18/01 696	Partial TRANSCRIPT filed [0-0] jury trial for dates of 11/29/01 {SEALED}. (nl)
12/18/01 697	TRANSCRIPT filed [0-0] jury trial for dates of 11/30/01 (nl)
12/18/01 698	Partial TRANSCRIPT filed [0-0] jury trial for dates of 11/30/01 {SEALED}. (nl)
12/18/01 699	TRANSCRIPT filed [0-0] jury trial for dates of 12/3/01 (nl)
12/18/01 700	Partial TRANSCRIPT filed [0-0] jury trial for dates of 12/3/01 {SEALED}. (nl)
12/18/01 701	TRANSCRIPT filed [0-0] jury trial for dates of 12/4/01 (nl)
12/18/01 702	Partial TRANSCRIPT filed [0-0] jury trial for dates of 12/4/01 {SEALED}. (nl)
12/18/01 703	TRANSCRIPT filed [0-0] jury trial for dates of 12/5/01 (nl)
12/18/01 704	TRANSCRIPT filed [0-0] jury trial for dates of 12/6/01 (nl)
12/18/01 705	TRANSCRIPT filed [0-0] jury trial for dates of 12/7/01 (nl)
12/18/01 706	TRANSCRIPT filed [0-0] jury trial for dates of 12/10/01 (nl)
12/18/01 707	TRANSCRIPT filed [0-0] jury trial for dates of 12/11/01 (nl)
12/18/01 708	TRANSCRIPT filed [0-0] jury trial for dates of 12/12/01 (nl)
12/18/01 709	TRANSCRIPT filed [0-0] jury trial for dates of 12/13/01 (nl)
12/18/01 710	TRANSCRIPT filed [0-0] jury trial for dates of 12/13/01 (nl)
12/18/01 711	TRANSCRIPT filed [0-0] jury trial for dates of 12/14/01 (nl)
12/21/01 712	ORDER for Entry of Judgment (signed by Judge Roderick R. McKelvie) copies to: cnsl. (nl)
12/21/01 713	JUDGMENT for Broadcom Corporation against Intel Corporation copies to: cnsl. (nl)
12/21/01 714	MOTION by Intel Corporation with Proposed Order to Dismiss Broadcom's counterclaims, and to Strike Broadcom's affirmative defenses (nl) [Entry date 12/28/01]
12/21/01 715	Opening Brief Filed by Intel Corporation [714-1] motion to Dismiss Broadcom's counterclaims, [714-2] motion to Strike

		Broadcom's affirmative defenses {SEALED}. (nl) [Entry date 12/28/01]
12/21/01	716	Appendix to Brief Filed by Intel Corporation Appending [715-1] opening brief {SEALED}. (nl) [Entry date 12/28/01]
1/2/02	717	STIPULATION with proposed order: Intel's response to Broadcom's motion for leave to conform pleadings due 1/7/02, Intel's amended pleadings due 1/7/02, and Broadcom's response to Intel's motion to dismiss Broadcom's counterclaims and to strike affirmative defenses due 1/25/02. (nl) [Entry date 01/03/02]
1/3/02	--	So Ordered granting [717-1] stipulation (signed by Judge Roderick R. McKelvie) Notice to all parties. (nl) [Entry date 01/04/02]
1/7/02	718	Answer Brief Filed by Intel Corporation [678-1] motion for Leave to Conform the pleadings to the evidence or in the alternative to add paragraphs 60A to 60J to the second amended complaint (nl)
1/7/02	719	Appendix to Brief Filed by Intel Corporation Appending [718-1] answer brief {SEALED}. (nl)
1/7/02	720	MOTION by Intel Corporation with Proposed Order for Leave to File an amended complaint Answer Brief due 1/21/02 re: [720-1] motion (nl)
1/7/02	721	Opening Brief Filed by Intel Corporation [720-1] motion for Leave to File an amended complaint (nl)
1/7/02	722	Letter from Judge McKelvie to counsel re resignation. (nl) [Entry date 01/08/02]
1/8/02	723	MOTION by Broadcom Corporation for Judgment as a Matter of Law that Broadcom products do not meet the "control means" limitation of claim 10 of the '201 patent (nl)
1/8/02	724	STIPULATION with proposed order re briefing schedule on post-trial motions: opening 1/30/02, answering 2/21/02, reply 2/28/02. (nl)
1/8/02	725	RENEWED MOTIONS by Intel Corporation for Judgment as a Matter of Law (nl) [Entry date 01/09/02] [Edit date 01/09/02]
1/8/02	726	MOTION by Intel Corporation for New Trial (nl) [Entry date 01/09/02]
1/9/02	727	Steno Notes for 12/1-19/01; rprtr. K. Maurer (nl)
1/9/02	--	So Ordered granting [724-1] stipulation (signed by Judge Roderick R. McKelvie) Notice to all parties. (nl) [Entry date 01/10/02]
1/11/02	728	STIPULATION with proposed order re Broadcom's response to Intel's motion for leave to file amended complaint due 1/28/02. (nl) [Entry date 01/14/02]
1/14/02	729	**Terminated attorney J. Andrew Huffman for Intel Corporation, attorney J. Andrew Huffman for Intel Corporation Notice of attorney appearance for Intel Corporation, Intel Corporation by William J. Marsden Jr. (nl)

1/14/02	730	Reply Brief Filed by Broadcom Corporation [678-1] motion for Leave to Conform the pleadings to the evidence or in the alternative to add paragraphs 60A to 60J to the second amended complaint (nl)
1/15/02	731	MOTION by Broadcom Corporation with Proposed Order for Houtan K. Esfahani and Vincent P. Kovalick to Appear Pro Hac Vice (nl)
1/15/02	--	So Ordered granting [728-1] stipulation (signed by Judge Roderick R. McKelvie) Notice to all parties. (nl) [Entry date 01/16/02]
1/16/02	--	Deadline updated; reset Answer Brief Deadline to 1/28/02 re: [720-1] motion for Leave to File an amended complaint (nl)
1/16/02	732	Letter from Judge McKelvie to counsel re reassignment of case. (nl)
1/18/02	733	Letter from John Gartman, Esq. to Judge McKelvie re clarification of Court's 1/16/02 letter. (nl) [Entry date 01/22/02]
1/23/02	734	CASE reassigned to Judge Sue L. Robinson . Notice to all parties. (rb)
1/24/02	--	Tele-conference held; rprtr. V. Gunning (nl) [Entry date 01/28/02]
1/25/02	735	TRANSCRIPT filed [0-0] telephone conference for dates of 1/24/02; Judge McKelvie presiding; crt. rptr. V. Gunning present. (rd) [Entry date 01/28/02]
1/25/02	736	STIPULATION to extend time for deft. to respond to pltf.'s motion for leave to file amd. comp. and motion to dismiss deft.'s counterclaims and to strike deft.'s affirmative defenses with proposed order (rd) [Entry date 01/28/02]
1/28/02	737	STIPULATION to extend briefing scheduling for pltf.'s expedited motion for reassignment of the action and the parties' renewed motions for jmol, and new trial; with proposed order (rd) [Entry date 01/29/02]
1/28/02	738	Letter to Judge Robinson from W. Marsden, Jr. re filing of motions today. (rd) [Entry date 01/29/02]
1/28/02	739	EXPEDITED MOTION by Intel Corporation for reassignment of the action to the Honorable R. McKelvie Answer Brief due 2/11/02 re: [739-1] motion (rd) [Entry date 01/29/02]
1/28/02	740	MEMORANDUM by Intel Corporation in opposition to [731-1] motion for Houtan K. Esfahani and Vincent P. Kovalick to Appear Pro Hac Vice (rd) [Entry date 01/29/02]
1/29/02	--	So Ordered granting [736-1] stipulation reset Answer Brief Deadline to 2/8/02 re: [720-1] motion for Leave to File an amended complaint, 2/8/02 re: [714-1] motion to Dismiss Broadcom's counterclaims, and reset Reply Brief Deadline to 2/22/02 re: [720-1] motion for Leave to File an amended complaint, 2/22/02 re: [714-1] motion to Dismiss Broadcom's counterclaims (signed by Judge Sue L. Robinson) Notice to all parties. (rd)

1/30/02	--	Deadline updated; set Telephone Conference for 10:00 2/6/02 to discuss recent filings in case (DI#737-740). (rd) [Edit date 01/30/02]
2/1/02	741	Letter to Clerk from W. Marsden enclosing two copies of corrected page 1 of Intel's Expedited Motion for Reassignment of the Action to J. McKelvie filed 1/28/02. (rd) [Entry date 02/04/02]
2/6/02	--	Motion hearing via telecnf. re: [739-1] motion for reassignment of the action to the Honorable R. McKelvie held; Judge Robinson presiding; crt. rptr. B. Gaffigan present; MOTION DI#739 DENIED during telecnf.; see transcript for details. (rd)
2/6/02	--	So Ordered during telecnf. on 2/6/02 denying [739-1] motion for reassignment of the action to the Honorable R. McKelvie (signed by Judge Sue L. Robinson) see transcript for telecnf. for further details. (rd)
2/6/02	742	Letter to W. Marsden, Jr. and R. Morse from Judge Robinson re statutory provisions governing judical recusals. (rd) [Entry date 02/07/02]
2/7/02	743	Steno Notes for 2/6/02; telecnf.; Judge Robinson presiding; crt. rptr. B. Gaffigan present. (rd)

END OF DOCKET: 1:00cv796

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Docket as of March 22, 2001 9:50 pm Web PACER (v2.3)

U.S. District Court

U.S. District for the Northern District of California (San Jose)

CIVIL DOCKET FOR CASE #: 00-CV-21206

Broadcom Corporation v. Intel Corporation

Filed: 10/06/00
Assigned to: Judge James Ware
Jury demand: Defendant
Demand: $0,000
Nature of Suit: 830
Lead Docket: 00-CV-20994
Jurisdiction: Federal Question
Dkt# in other court: None
Cause: 28:2201 Constitutionality of State Statutes

BROADCOM CORPORATION Plaintiff	Michael A. Ladra [COR NTC] Rodney G. Strickland, Jr. [COR LD NTC] Ron E. Shulman [COR LD NTC] Vera M. Elson [COR NTC] Wilson Sonsini Goodrich & Rosati 650 Page Mill Road Palo Alto, CA 94304-1050 650-493-9300
v. INTEL CORPORATION defendant	John E. Gartman [COR LD NTC] Juanita Brooks [COR NTC] Fish & Richardson PC 4350 La Jolla Village Dr Ste 500 La Jolla, CA 92122 858-678-5070

DOCKET PROCEEDINGS

DATE	#	DOCKET ENTRY
10/6/00	1	COMPLAINT for declaratory judgment; Summons(es) issued; Fee status pd entered on 10/6/00 in the amount of $ 150 (Receipt No. 5501373) [3:00-cv-03702] (fb) [Entry date 10/13/00] [5:00cv21206]
10/6/00	2	ORDER RE COURT PROCEDURE and SCHEDULE (ADR Multi-Option) by Judge Phyllis J. Hamilton : Proof of service to be filed by 11/20/00 ; counsels' case management statement to be filed by 1/29/01 ; initial case management conference will be held 2:30 2/8/01 . (cc: all counsel) [3:00-cv-03702] (fb) [Entry date 10/13/00] [5:00cv21206]
10/10/00	3	NOTICE by Plaintiff Broadcom Corporation of related case(s) CV-00-20994 RMW [3:00-cv-03702] (fb) [Entry date 10/13/00] [5:00cv21206]
10/16/00	--	REPORT on the filing or determination of an action regarding Patent (cc: form mailed to register) [3:00-cv-03702] (fb) [Entry date 10/16/00] [5:00cv21206]
10/16/00	4	ORDER by Judge Phyllis J. Hamilton recusing (Date Entered: 10/20/00) (cc: all counsel) [3:00-cv-03702] (fb) [Entry date 10/20/00] [5:00cv21206]
10/19/00	5	ORDER by Executive Committee Case reassigned to Judge Maxine M. Chesney (Date Entered: 10/20/00) (cc: all counsel) [3:00-cv-03702] (fb) [Entry date 10/20/00] [5:00cv21206]
10/20/00	6	RETURN OF SERVICE executed upon defendant Intel Corporation on 10/13/00 [3:00-cv-03702] (fb) [Entry date 10/23/00] [5:00cv21206]
10/24/00	7	ORDER by Judge Maxine M. Chesney setting status conference for 10:30 2/2/01 (cc: all counsel) [3:00-cv-03702] (ab) [Entry date 10/26/00] [5:00cv21206]
10/25/00	8	ORDER by Judge Maxine M. Chesney of recusal (Date Entered: 10/26/00) (cc: all counsel) [3:00-cv-03702] (ab) [Entry date 10/26/00] [5:00cv21206]
10/27/00	9	ORDER by Executive Committee Case reassigned to Judge William H. Alsup (Date Entered: 10/27/00) (cc: all counsel) [3:00-cv-03702] (ab) [Entry date 10/27/00] [5:00cv21206]
11/1/00	--	RECEIVED stipulation extending time to answer complaint submitted by Plaintiff Broadcom Corporation, defendant Intel Corporation [3:00-cv-03702] (rbe) [Entry date 11/03/00] [5:00cv21206]
11/6/00	10	STIPULATION extending time to answer complaint [3:00-cv-03702] (rbe) [Entry date 11/07/00] [5:00cv21206]
11/8/00	11	NOTICE OF MOTION AND MOTION WITH MEMORANDUM OF POINTS AND AUTHORITIES before Judge William H. Alsup by defendant Intel Corporation to dismiss, or in the alternative, to stay with Notice set for 12/13/00 9:00 [3:00-cv-03702]

(rbe) [Entry date 11/09/00] [5:00cv21206]

11/8/00	12	DECLARATION by John E. Gartman on behalf of defendant Intel Corporation re motion to dismiss [11-1], re motion to stay [11-2] [3:00-cv-03702] (rbe) [Entry date 11/09/00] [5:00cv21206]
11/8/00	--	RECEIVED Proposed Order (defendant Intel Corporation) re: motion to dismiss [11-1], re: motion to stay [11-2] [3:00-cv-03702] (rbe) [Entry date 11/09/00] [5:00cv21206]
11/15/00	13	ANSWER by defendant Intel Corporation to complaint [1-1]; jury demand [3:00-cv-03702] (rbe) [Entry date 11/16/00] [5:00cv21206]
11/15/00	15	PROOF OF SERVICE of answer [13-1] [3:00-cv-03702] (rbe) [Entry date 11/17/00] [5:00cv21206]
11/16/00	14	NOTICE of hearing by defendant Intel Corporation setting motion to dismiss [11-1] ; hearing set for 8:00 12/21/00, motion to stay [11-2] ; hearing set for 8:00 12/21/00 [3:00-cv-03702] (rbe) [Entry date 11/17/00] [5:00cv21206]
11/17/00	16	CLERK'S NOTICE Case Management Conference set for 8:00 12/21/00 ; [3:00-cv-03702] (rbe) [Entry date 11/21/00] [5:00cv21206]
11/29/00	17	ORDER by Judge Ronald M. Whyte relating cases; 5:00-cv-20994 with member cases 3:00-cv-3702 (Date Entered: 12/1/00) (cc: all counsel) [3:00-cv-03702] (rbe) [Entry date 12/01/00] [5:00cv21206]
11/29/00	--	Docket Modification (Administrative) to Scheduling order relating cases; 5:00-cv-20994 with member cases 3:00-cv-3702 [17-1], order [17-2] Case reassigned to Judge Ronald M. Whyte referred to Judge Ronald M. Whyte the motion to dismiss [11-1], referred to Judge Ronald M. Whyte the motion to stay [11-2] [3:00-cv-03702] (rbe) [Entry date 12/01/00] [5:00cv21206]
12/8/00	18	ORDER by Judge Ronald M. Whyte Re: vacating related case order; Judge handling Action No. C00-20994 will determine whether the actions will be related. (Date Entered: 12/12/00) (cc: all counsel) [5:00-cv-21206] (cv) [Entry date 12/12/00] [5:00cv21206]
12/14/00	19	NOTICE by defendant Intel Corporation of request to take its motion to dismiss or, in the alternative, stay, off calendar [5:00-cv-21206] (dhm) [Entry date 12/22/00] [5:00cv21206]
1/18/01	--	Docket Modification (Administrative) pursuant to Order filed 12/8/00 vacating reassignment order , Case is reassigned to Judge James Ware referred to Judge James Ware the motion to dismiss [11-1], referred to Judge Ware the motion to stay [11-2] [5:00-cv-21206] (dhm) [Entry date 01/18/01] [5:00cv21206]
1/31/01	20	ORDER by Judge James Ware relating cases C00-21206 and C00-20994 ; (Date Entered: 1/31/01) (cc: all counsel) [5:00-cv-21206, 5:00-cv-20994] (dhm) [Entry date 01/31/01] [5:00cv20994 5:00cv21206]
2/2/01	21	Notice of second re-notice Hearing by Intel Corporation in 5:00-cv-21206 Hearing scheduled for 3/12/01 of the motion

		to dismiss or stay (cc: all counsel) [5:00-cv-21206] (cv) [Entry date 02/05/01] [5:00cv21206]
2/16/01	22	PROOF OF SERVICE by Plaintiff Broadcom Corporation in of standing order [5:00-cv-21206] (cv) [Entry date 02/26/01] [5:00cv21206]
2/16/01	23	OPPOSITION by Plaintiff Broadcom Corporation in 5:00-cv-21206 to motion to dismiss [11-1], motion to stay [11-2] [5:00-cv-21206] (cv) [Entry date 02/26/01] [5:00cv21206]
2/16/01	24	DECLARATION by R. G. Strickland Jr., on behalf of Plaintiff Broadcom Corporation in 5:00-cv-21206 re opposition [23-1] [5:00-cv-21206] (cv) [Entry date 02/26/01] [5:00cv21206]
2/16/01	25	PROOF OF SERVICE by Plaintiff Broadcom Corporation in of declaration [24-1], opposition [23-1] [5:00-cv-21206] (cv) [Entry date 02/26/01] [5:00cv21206]
2/26/01	26	EX-PARTE APPLICATION before Judge James Ware by defendant Intel Corporation in 5:00-cv-21206 reply and supporting documents under seal [5:00-cv-21206] (cv) [Entry date 02/28/01] [5:00cv21206]
2/28/01	27	REPLY by defendant Intel Corporation in 5:00-cv-21206 re motion to dismiss [11-1], re motion to stay [11-2] (under seal) [5:00-cv-21206] (cv) [Entry date 03/01/01] [5:00cv21206]
2/28/01	28	DECLARATION by S. K. Wessels on behalf of defendant Intel Corporation in 5:00-cv-21206 re reply [27-1] (under seal) [5:00-cv-21206] (cv) [Entry date 03/01/01] [5:00cv21206]
2/28/01	29	ORDER by Judge James Ware granting motion seal [26-1] (Date Entered: 3/1/01) (cc: all counsel) [5:00-cv-21206] (cv) [Entry date 03/01/01] [5:00cv21206]
2/28/01	30	ORDER by Judge James Ware setting hearing on motion to dismiss [11-1] 3/26/01, setting hearing on motion to stay [11-2] 3/26/01 (Date Entered: 3/1/01) (cc: all counsel) [5:00-cv-21206] (cv) [Entry date 03/01/01] [5:00cv21206]
3/21/01	31	ORDER by Judge James Ware denying motion to dismiss without prejudice [11-1], granting motion to stay [11-2] to stay case pending a ruling on the personal jurisdiction motion in Delaware. (Date Entered: 3/22/01) (cc: all counsel) [5:00-cv-21206] (cv) [Entry date 03/22/01] [5:00cv21206]

Case Flags:
M-ADR
RELATE
AO279
STAY

END OF DOCKET: 5:00cv21206

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Intel Corp. v. Broadcom Corp., 173 F. Supp. 2d 201, 2001 U.S. Dist. LEXIS 18936 (D. Del. 2001)

PRIOR HISTORY (3 citing references) • **Hide Prior History**

Intel Corp. v. Broadcom Corp., 167 F. Supp. 2d 692, 2001 U.S. Dist. LEXIS 16506 (D. Del. 2001)

Patent interpreted:
Intel Corp. v. Broadcom Corp., 172 F. Supp. 2d 478, 172 F. Supp. 2d 515, 172 F. Supp. 2d 516, 2001 U.S. Dist. LEXIS 18422 (D. Del. 2001)

Patent interpreted:
Intel Corp. v. Broadcom Corp., 172 F. Supp. 2d 478, 172 F. Supp. 2d 516, 2001 U.S. Dist. LEXIS 18485 (D. Del. 2001)

Partial summary judgment granted by, in part, Partial summary judgment denied by, in part (CITATION YOU ENTERED):
Intel Corp. v. Broadcom Corp., 173 F. Supp. 2d 201, 2001 U.S. Dist. LEXIS 18936 (D. Del. 2001)

CITING DECISIONS (1 citing decision)

3RD CIRCUIT - U.S. DISTRICT COURTS

Cited by:
Becton, Dickinson & Co. v. Inverness Med. Tech., Inc., 176 F. Supp. 2d 258, 2001 U.S. Dist. LEXIS 21643 (D. Del. 2001)

Cited by:
2001 U.S. Dist. LEXIS 21643

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Citation: **2001 U.S. Dist. LEXIS 21643**

*176 F. Supp. 2d 258, *; 2001 U.S. Dist. LEXIS 21643, **

BECTON, DICKINSON AND COMPANY, Plaintiff, v. INVERNESS MEDICAL TECHNOLOGY, INC., Defendant.

Civil Action No. 00-001-RRM

UNITED STATES DISTRICT COURT FOR THE DISTRICT OF DELAWARE

176 F. Supp. 2d 258; 2001 U.S. Dist. LEXIS 21643

December 20, 2001, Decided

DISPOSITION: [1]** Plaintiff's motion for leave to amend its complaint granted. Defendant's motion for summary judgment of non-infringement of the Campbell patent denied.

CASE SUMMARY

PROCEDURAL POSTURE: Plaintiff patent owner sued defendant manufacturer, alleging that the manufacturer infringed two patents by making, using, selling, or offering for sale home pregnancy and ovulation tests. The patent owner moved to amend its complaint to withdraw its infringement claim as to one patent. The manufacturer moved for summary judgment of noninfringement of the second patent.

OVERVIEW: The patents at issue related to immunoassays. The manufacturer produced over-the-counter home pregnancy and ovulation immunoassays. The court construed the term "contacting" to mean the coming together or touching of two objects or surfaces. Since the term "contacting" was not unclear or ambiguous, there was no reason to use the patent specification to explain the claims. The court also construed the terms "tracer." The court determined that the manufacturer was not entitled to summary judgment of non-infringement. One claim could have been infringed simply by permitting the solution of analyte and/or the tracer to come together with or touch the binder area of the solid support and meeting the other claim limitations. The court allowed the patent owner to withdraw its claims as to the other patent because the United States Patent and Trademark Office determined that the patent owner was not entitled to patent the claims of the patent.

OUTCOME: The patent owner's motion for leave to amend was granted. The manufacturer's motion for summary judgment of non-infringement was denied.

CORE TERMS: patent, tracer, binder, solid, analyte, specification, assay, contacting, spot, antibody, immunoassay, invention, disclose, user, visible, technology, bind, kit, extrinsic evidence, signal, particulate, infringe, lateral, intrinsic evidence, plain meaning, patentee, construe, summary judgment, non-infringement, patent issued

CORE CONCEPTS - ◆ Hide Concepts

Civil Procedure : Pleading & Practice : Pleadings : Amended Pleadings

◆ Fed. R. Civ. P. 15(a) requires that, after the adverse party has filed its responsive pleading, a party wishing to amend its pleading seek leave to amend from the court. In such cases, leave to amend shall be freely given when justice so requires. Fed. R. Civ. P. 15(a).

Patent Law : Infringement : Acts of Infringement

Evaluation of whether a defendant infringes the claims of a patent requires a two step analysis. First, the court must construe the claims of the patent. Second, the court must compare the claims, as construed by the court, to the defendant's products or process that the plaintiff alleges infringe to determine whether all of the claim limitations are present. This second step, analyzing the allegedly infringing product or process, presents a question of fact. If the court finds that there is no genuine issue of material fact regarding the allegedly infringing products, then the court's analysis of infringement reduces simply to construing the claims and applying that construction to the allegedly infringing products on summary judgment.

Patent Law : Infringement : Claim Interpretation

In construing a patent's claims, the court must begin with intrinsic evidence, such as the patent itself, the patent specification, and the prosecution history. First, the court examines the patent claims and must accord the words of the claim their plain and ordinary meaning to one of skill in the art. Technical terms included in the patent claims are to be furnished the meaning given by those experienced in the field of the invention. The plain and ordinary meaning of the words of the claim may be avoided, however, if patentee chooses to be his own lexicographer and assigns a different meaning to the claim terms in either the patent specification or prosecution history.

Patent Law : Infringement : Claim Interpretation

After consideration of the patent claims, courts consider the remaining intrinsic evidence, including the patent specification and prosecution history. If the claim language is clear on its face, then the court's consideration of the rest of the intrinsic evidence is restricted to determining if a deviation from the clear language of the claims is specified. Such a deviation would include a patentee using a term in a manner other than its plain and ordinary meaning or if the prosecution history reveals that the patentee forfeited a particular claim construction to distinguish a prior art reference.

Patent Law : Infringement : Claim Interpretation

If the language of the claim is unclear on its face, then the court may consider the claim specification and prosecution history to resolve the claim's ambiguity. Patent claims should be construed in a manner that is consistent with the its specification, for the construction that stays true to the claim language and most naturally aligns with the patent's description of the invention will be, in the end, the correct construction. The specification should not be used, however, to read into the patent claims a limitation that exists only in the specification or the preferred embodiment of the invention. In contrast, a patentee's statements disclaiming a more expansive scope of the claims during the patent's prosecution can be used to limit the claim's breadth. The prosecution history limits the interpretation of claim terms so as to exclude any interpretation that was disclaimed during prosecution.

Patent Law : Infringement : Claim Interpretation

Evidence other than the patent claims, the specification, and prosecution history is considered extrinsic evidence. Extrinsic evidence may be used to assist the court in understanding the underlying technology. A dictionary is extrinsic evidence that may be used to aid the court's analysis of the plain meaning of claim terms. Any other use of extrinsic evidence, however, is limited to those situations in which the intrinsic evidence is inadequate to unambiguously construe the patent's claims. Relying on extrinsic evidence to construe a claim is proper only when the claim language remains genuinely ambiguous after consideration of the intrinsic evidence. Even in this situation, extrinsic evidence may never be used for the purpose of varying or contradicting the terms in the claims.

Patent Law : Infringement : Claim Interpretation

- The uses of the patent specification to define the terms of the patent claims is limited. If the claims are clear, the patent specification can only be used to determine whether a deviation from the claims is required, such as when the specification uses a term in other than its plain and ordinary meaning. If the claims are unclear, then the patent specification can be used more liberally to aid the court in resolving ambiguities and identifying a claim construction that properly delimits the bounds of the patentee's invention.

Patent Law : Infringement : Claim Interpretation
- Patent specifications cannot be used to import into the patent claims a limitation suggested only by the specification or the preferred embodiment of the invention.

Patent Law : Infringement : Claim Interpretation
- Statements made during the prosecution history of another patent are extrinsic evidence. Such statements would only be intrinsic evidence if the patentee used those statements in the prosecution of the contested patent.

Patent Law : Infringement : Claim Interpretation
- The literal meaning of a claim is fixed upon the issuance of the patent.

Patent Law : Infringement : Claim Interpretation
- The written description part of the specification itself does not delimit the right to exclude. That is the function and purpose of patent claims.

Patent Law : Infringement : Claim Interpretation
- The patent specification cannot be used to limit a claim in a manner suggested only in the specification or preferred embodiment of the invention. Neither can the prosecution history of a later patent, which is extrinsic evidence, alter the clear meaning of the terms in the claim of an earlier patent.

Patent Law : Infringement : Summary Judgment
- The moving party is entitled to summary judgment if the pleadings, depositions, answers to interrogatories, and admissions on file, together with the affidavits, if any, show that there is no genuine issue as to any material fact and the moving party is entitled to judgment as a matter of law. Fed. R. Civ. P. 56(c).

Patent Law : Infringement : Summary Judgment
- Fed. R. Civ. P. 56 requires that the party moving for summary judgment bear the initial burden of informing the court of the basis for its motion and demonstrate the absence of a genuine issue of material fact. A genuine issue of material fact is present when the evidence is such that a reasonable jury could return a verdict for the nonmoving party. The evidence must be viewed in the light most favorable to the non-moving party. Once the moving party has shown an absence of genuine issue of material fact, it is incumbent upon the non-moving party to come forward with specific facts showing that there is a genuine issue for trial. Fed. R. Civ. P. 56(e).

Patent Law : Infringement : Summary Judgment
- Establishing patent infringement will require the plaintiff to prove that every limitation of the claims asserted to be infringed is found in the accused device. Thus, to demonstrate its entitlement to judgment as a matter of law that its accused products do not infringe, the party moving for summary judgment must show that after viewing the alleged facts in the light most favorable to the non-movant, there is no genuine issue whether the accused device is encompassed by the claims.

COUNSEL: Richard L. Horwitz, Esquire, Potter Anderson & Corroon LLP, Wilmington, Delaware, for plaintiff.

Jesse J. Jenner, Esquire and Kevin J. Culligan, Esquire, Fish & Neave, New York, New York, for plaintiff.

Brian C. Cannon, Esquire, Fish & Neave, Palo Alto, California, for plaintiff.

Patricia Smink Rogowski, Esquire, Connolly Bove Lodge & Hutz LLP, Wilmington, Delaware, for defendant.

Michael A. O'Shea, Esquire, Leiv H. Blad, Esquire, Heather F. Auyang, Esquire, Julie N. Ambrose, Esquire and Mary Walters, Esquire, Clifford Chance Rogers & Wells LLP, Washington, D.C., for defendant.

JUDGES: McKELVIE, District Judge.

OPINIONBY: McKELVIE

OPINION: [*260] MEMORANDUM OPINION

December 20, 2001

Wilmington, Delaware

McKELVIE, District Judge

This is a patent case. Plaintiff Becton, Dickinson and Company ("BD") is a New Jersey corporation with its principal place of business in Franklin Lakes, New Jersey. Defendant Inverness Medical Technology Inc., formerly known as Selfcare, Inc., is a Delaware corporation with its principal place **[**2]** of business in Waltham, Massachusetts. In its complaint, BD claims ownership of the two patents it asserts in this suit, United States Patent No. 4,703,017 (the 017 or "Campbell" patent) and United States Patent No. 5,591,645 (the 645 or "Rosenstein" patent). BD's complaint, filed January 3, 2000, alleges that Inverness has infringed both patents by making, using, selling or offering for sale home pregnancy and ovulation tests, such as the "Inverness Medical, Inc., Early Pregnancy Test."

Following the filing of BD's complaint, the United States Patent and Trademark Office ("PTO") conducted an interference proceeding to determine whether the Rosenstein patent had an earlier priority of invention than an invention made by Carter-Wallace, Inc. BD and Carter-Wallace agreed to arbitrate the priority of invention and the arbitrator ruled in favor of Carter Wallace. As a result, the PTO determined BD was not entitled to patent the 23 claims of the Rosenstein patent. Accordingly, BD has moved to amend its complaint to withdraw its claim that Inverness infringes the Rosenstein patent.

On August 29, 2001, Inverness moved for summary judgment of noninfringement of the Campbell patent. Inverness **[**3]** argues that because its product is a "lateral flow assay" and not a "spot assay," as is disclosed in the Campbell patent, it does not infringe. The court heard oral argument on Inverness's motion on November 8, 2001.

This is the court's decision on BD's motion to amend its complaint and Inverness's motion for summary judgment.

I. FACTS AND PROCEDURAL HISTORY

The court draws the following facts from the Campbell and Rosenstein patents, their prosecution histories, and the affidavits **[*261]** and documents submitted by the parties.

A. General Description of the Technology

The patents at issue relate to immunoassays. Immunoassays are tests used to detect the presence or quantity of a particular substance in a sample of bodily fluid by using principles derived from the immune system of humans or animals. Specifically, ammunoassays detect the presence of a substance by utilizing the binding relationship of an antibody and an antigen. Antibodies are protein molecules that attach to target molecules, or antigens. Antibodies can be custom-designed to attach to a specific designated antigen. The antigen being analyzed in an immunoassay is called an "analyte."

Some immunoassays test **[**4]** for the presence of an analyte by introducing a labeled antibody, called a "tracer," to the sample being tested. The tracer antibody contains a label or tag that permits the user to visually evaluate the presence of tracer in a sample. If the liquid sample contains the particular analyte being tested, the tracer will bind to the analyte.

Another kind of antibody used in immunoassays is called a binder. A binder is an antibody that is attached to a solid support that, like the tracer, will bind to the analyte if present in a sample. Unlike a tracer antibody, the binder is immobile.

Pregnancy tests are a common application of immunoassays, although the technique has many uses. When a woman is pregnant, her urine contains increased levels of a particular hormone called human chorionic gonadotropin ("hCG"). The hCG is the analyte. Because hCG is an antigen, it will bind to an antibody, if present. Thus, immunoassays might use a tracer antibody, a binder antibody, or both to test for the presence of hCG in a sample.

B. The Campbell patent

The 017 patent is entitled "Solid Phase Assay with Visual Readout." Its inventors are listed as Robert L. Campbell, Daniel B. Wagner, and James **[**5]** P. O'Connell and its assignee is BD. The application for the Campbell patent was filed on February 14, 1984 and the patent issued on October 27, 1987.

The invention disclosed in the Campbell patent, according to the patent specification, is an immunoassay "which would permit determination of an analyte by use of a tracer wherein the tracer can be visually determined without instrumentation and without further treatment of the tracer." That is, the Campbell patent discloses an invention that permits a user to test for the presence of an analyte with a tracer and binder, resulting in an indication that is visible to the naked eye. While the patent specification goes on to discuss various types of assays that can be created using a tracer, analyte, and binder, the parties focus on one type, described as a "sandwich" assay. In a sandwich assay, "the binder . . . supported on the solid support is a binder for only the analyte" and "the tracer is a tracer which is specific for the analyte." If the analyte is present in the solution being tested, the "tracer [becomes] bound to the analyte which [then becomes] bound to the supported binder." Because the binder antibody is immobile and **[**6]** the tracer antibody has a tag, the result is a visible reaction in the binder area of the solid support that designates the existence of the analyte in the sample. In the absence of the analyte, neither the tracer antibody nor the binder antibody will have an analyte with which to bond and there will be no visual reaction in the binder area.

The Campbell patent is comprised of 62 claims, of which three are independent **[*262]** process claims (1, 14, 59) and one is an independent product claim (38), described by Inverness as a "kit" claim. Claim 1 states in part:

> A process for assaying for an analyte, comprising: contacting a binder supported on a test area of a solid with a solution of analyte and a tracer, said binder being a binder for at least the analyte, said tracer being comprised of a ligand labeled with

a visible particulate label wherein when said particulate label is a sac including a visable [sic] dye, . . .

Claim 14 contains similar introductory language to that of claim 1. Claim 14 begins as follows:

A process for assaying for an analyte, comprising: contacting a binder supported on a test area of a solid support with a solution analyte and a tracer, **[**7]** said binder being a binder for at least the analyte, said tracer being comprised of a ligand labeled with a visible particulate label wherein when said particulate label is a sac including a visible dye, . . .

Claim 59 is also similar to claims 1 and 14, but discusses only the contacting of a binder and the solution of analyte, rather than also including the tracer. It begins as follows:

A process for assaying for an analyte, comprising: contacting a binder for an analyte supported on a test area of a solid support with a solution of analyte to bind analyte to said binder; . . .

Thus, all three independent process claims begin with similar language describing the contacting of a binder for an analyte on a solid support with a solution of analyte and, in the case of claims 1 and 14, also a tracer.

The product or "kit" claims include claims 38 through 45 and claims 52 and 53. The only independent product claim, claim 38, states the following:

A reagent kit for determining an analyte in solution comprising: a solid support in a concentration of at least 1 mug/cm<2>; and a tracer, said binder being a binder for at least the analyte, said tracer being comprised **[**8]** of a ligand labeled with a visible particulate label wherein when said particulate label is a sac including a visible dye, . . .

The Campbell patent contains a number of examples that illustrate uses of the patent's technology. Example III, for example, is an immunoassay for testing pregnancy by examining the presence of hCG in urine. The procedure in the example calls upon the user to cut a 1 cm disk of nitrocellulose paper, which serves as the solid support. The user then pipets 3 ul of 1:50 dilution hCG antibody to the center of the disk and allows the antibody to dry. After further treatment, the user pipets 200 ul of urine onto the disc and incubates for one hour at room temperature. The disc is then decanted and the user pipets 300 ul of 1:12 dilution of tracer on the disc. After incubating the disc for an hour, decanting and washing it, a visible spot where the antibody was placed is a positive test for pregnancy.

While Inverness has submitted the file history of the Campbell patent, its present motion does not rely on statements made during its prosecution.

Inverness distinguishes its product from the Campbell patent by describing the claims of the patent as only covering **[**9]** a species of assay called a "spot assay." Inverness's expert, Dr. Claude R. Gunter, states that in a "spot assay,"

[a] binder is affixed on a solid support such as a paper strip forming a 'spot.' A sample suspected of containing analyte is then directly applied to the 'spot' of

> binder. If the sample contains the analyte, the analyte will bind to the binder, forming an *analyte/binder* complex, **[*263]** and thereby become immobilized on the 'spot.' A solution containing tracer that binds to the same analyte is also directly applied to the 'spot' of binder . . . The tracer binds to the *analyte/binder* complex, making a 'sandwich' of *tracer/analyte/binder*. The sample and tracer contacted to the 'spot' remain localized within the vicinity fo the 'spot.' Detection of tracer on the 'spot' where the sample and tracer were applied indicates existence of the analyte in the sample.

Declaration of Dr. Claude R. Gunter, P 22. While the word "spot assay" is not contained in the Campbell patent, Dr. Gunter's description of a spot assay is similar to the procedure delineated in Example III, in which the result is described as a "visual spot." In describing the Campbell patent as **[**10]** limited to a "spot assay," Dr. Gunter seeks to distinguish it from what he calls a "lateral flow assay." He describes Inverness's products as "one-stop lateral flow assays."

Before addressing Dr. Gunter's description of lateral flow assays, the court will examine the claims contained in the Rosenstein patent, which, according to Inverness, also disclose a lateral flow assay.

C. The Rosenstein patent

The 645 patent is entitled "Solid Phase Chromatographic Immunoassay." Its inventor is Robert W. Rosenstein and its assignee is BD. The application for the patent was filed April 20, 1993 and the patent issued on January 7, 1997.

The Rosenstein patent discloses a solid phase immunoassay. The solid phase immunoassay is based on a single solid support, described as a "dip-stick," divided into various portions. The solution being tested can flow across the portions of the solid support by means of capillary flow. The second portion of the solid support contains a binder for at least the analyte. Another portion of the solid support contains a tracer. The tracer is supported on the solid support, either on the first portion of the support or elsewhere, in a manner such that when the **[**11]** support is wetted, "the tracer is capable of being transported by capillarity to the second portion of the solid support," where the binder is immobilized. The patent specification discloses several different types of assays that can be conducted using the invention, including a "sandwich assay format." In a sandwich assay format "the first portion of the solid support is contacted with the sample containing the analyte, and the tracer portion of the solid support is wetted to cause both the tracer and analyte to flow by capillarity to the binder supported by the second portion of the support." If the analyte is present in the sample, the tracer and analyte both become attached to the binder. Additional tracer flows through to a third portion of the solid support and can be used as "a measure of the presence and/or amount of analyte in the sample." Additionally, the sandwich assay format can be used in a "yes or no" type of test by which the amount of tracer and binder used is such that no detectable amount of tracer flows through to the third portion of the solid support when the analyte is present.

Claim 1 of the Rosenstein patent describes the basic structure of the invention. **[**12]** It describes:

> A test strip for determining the presence of an analyte in a liquid sample comprising a solid support, said solid support comprising at least a first portion and a second portion, said portions being in the same plane so as to permit capillary flow communication with each other;
>
> said first portion being the site for application of the liquid sample and further **[*264]** comprising a tracer site, said tracer site consisting of a tracer movably supported therein wherein said tracer comprises a ligand, which specifically binds to

> the analyte, conjugated to a visible particulate marker; and
>
> said second portion being the site for visually determining the presence of the visible particulate marker, said second portion consisting of a binder immobilized therein which specifically binds to the analyte.

The Rosenstein patent contains 22 other claims, most of which are dependant either upon Claim 1 or Claim 11, which contains a similar description of a portioned test strip using a tracer and immobilized binder to test for the analyte.

Inverness has submitted a number of statements made by BD during the prosecution of the Rosenstein patent that distinguish the Rosenstein **[**13]** patent from the Campbell patent. Inverness contends the statements show that the Rosenstein patent claims a one-step lateral flow assay, while the Campbell patent does not disclose this technology. According to Dr. Gunter, in a lateral flow assay,

> the user . . . simply applies a sample suspected of containing the analyte [to the solid support] upstream from the binder. The sample moves by capillary action first encountering the tracer, releasing the tracer from the solid support. If the sample contains the analyte, the analyte and tracer will bind, and then continue to move downstream on the support to the binder. The *tracer/analyte* complex will bind to the binder, thereby becoming immobilized, making a "sandwich" of *tracer/analyte/binder*.

Declaration of Dr. Claude E. Gunter, P 24. In prosecuting the Rosenstein patent, BD made a number of statements distinguishing the Rosenstein patent from the Campbell patent on the basis that the former is a lateral flow assay. For example, in distinguishing the prior art to the patent examiner in a July 21, 1988 letter, BD stated that

> although Campbell discloses an assay which employs a tracer labeled with a sac, **[**14]** Campbell is not directed to a chromatographic-type of assay, and contains no suggestion that it would be possible to impregnate a strip with a tracer labeled with a sac and in the assay, have such tracer move by capillary action, as in the present invention.

Similarly, in a letter dated April 10, 1989, BD again states that "although Campbell discloses an assay which includes a tracer labeled with a sac, Campbell contains no suggestion that such a tracer may be effectively employed in an assay wherein it is required that the tracer be caused to flow across a binder." On March 13, 1999, BD stated in another letter that although Campbell teaches the use of a tracer,

> [BD] fails to understand how such a disclosure permits the Examiner to leap to the conclusion that one of ordinary skill in the art would have found it to be obvious that the application of such tracers to absorbent material would result in chromatographic flow of the tracer in a manner such that there could be provided an effective assay, particularly where [another patent] contains a specific teaching that a ligand conjugated to a particulate material does not chromatographically flow.

(emphasis **[**15]** in original). Last, on March 18, 1993, BD provided its most complete

explanation of the relationship between the Campbell patent and the Rosenstein patent.

> Campbell et al. disclose the use of visible particulate markers of type claimed herein; however, there are no examples in the specification that disclose the capillary **[*265]** flow of a visible particulate marker. The majority of the specification in Campbell et al. is devoted to a single zone, flow-through device. Campbell et al., however, do describe a multiple zone device where the zones are arranged in linear manner. . . In each zone, there is "spotted" a different concentration of "binder." Simultaneously (or sequentially), sample and tracer are applied to each spot individually or to the entire device collectively. There is no capillary flow between spots. Each of the zones, in the example, is configured for an independent flow-through read-out. Thus, the multi-zone device described in Campbell et al. does not exemplify a planar flow type device of the type claimed herein.

BD made similar comments distinguishing the Campbell patent when it prosecuted the Rosenstein European Patent, EP-284232. Inverness asserts the **[**16]** Rosenstein European Patent is essentially identical to the Rosenstein 645 patent.

D. Inverness's products

Inverness produces over-the-counter home pregnancy and ovulation immunoassays. Dr. Gunter describes them as one-step "later flow" assays. Inverness produced an example of its "Inverness Medical, Inc. Early Pregnancy Test," a product alleged by BD to infringe the Campbell patent. A woman uses the Early Pregnancy Test by applying the sample urine directly to an "absorbent wick" that serves as the solid support. The sample then "migrates" along the lateral direction of the solid support by "capillary flow." The sample first reaches the tracer, which is alleged to be dried to the solid support, and then reaches the binder. If hCG is present in the sample, the tracer will bind to the hCG and the two, in turn, will adhere to the binder, resulting in a visible colored line on the solid support.

E. Procedural History

On January 3, 2000, BD filed its complaint in this action, alleging Selfcare, Inc., Inverness's predecessor, infringes the Campbell and Rosenstein patents. Selfcare filed an answer and counterclaim for declaratory relief on May 30, 2000. On June 12, 2000, Selfcare **[**17]** moved to stay the proceedings pending the outcome of the interference proceeding on the Rosenstein patent. On February 22, 2001, the court denied Selfcare's motion to stay. On March 7, 2001, the court granted a motion submitted by Selfcare to substitute Inverness as defendant in this action.

On August 9, 2001, following the conclusion of the interference action in the PTO, BD filed its motion for leave to amend its complaint to withdraw its claims of infringement of the Rosenstein patent. Inverness responded to that motion on August 24, 2001 and filed its own motion for leave to amend its answer and counterclaims on October 4, 2001. Inverness's motion sought to add claims for alleged violations of federal and Massachusetts antitrust law. Following a teleconference with the parties on November 20, 2001, the court granted Inverness's motion for leave to amend its answer and counterclaims and bifurcated trial on Inverness's new counterclaims for consideration following trial on BD's infringement claims and Inverness's initially-filed counterclaim seeking declaratory relief of non-infringement.

Inverness submitted a motion of summary judgment of non-infringement of the Campbell patent **[**18]** on August 29, 2001. Following the filing of BD's answer and Inverness's reply, the court heard oral argument on November 8, 2001.

Trial is currently scheduled to begin April 15, 2002.

[*266] II. DISCUSSION

A. BD's Motion for Leave to Amend its Complaint

BD lost the interference proceeding before the PTO on the Rosenstein patent. Therefore, it admits that it has no rights to enforce the 23 claims in that patent and has moved to withdraw from its complaint the claim that Inverness infringes that patent. Federal Rule of Civil Procedure 15(a) requires that, after the adverse party has filed its responsive pleading, a party wishing to amend its pleading seek leave to amend from the court. In such cases, "leave [to amend] shall be freely given when justice so requires." Fed. R. Civ. P. 15(a).

Furthermore, BD's motion to amend its complaint includes a covenant that it will not sue Inverness for infringement of the Rosenstein patent. According to BD, this covenant is sufficient to remove any reasonable apprehension of suit that Inverness might have on this patent. Thus, Inverness cannot seek a declaratory judgment that the Rosenstein patent is invalid, uninfringed, or unenforceable. **[**19]** See Amana Refrigeration, Inc. v. Quadlux, Inc., 172 F.3d 852, 855 (Fed. Cir. 1999) (holding patentee's covenant not to sue divests the court of the actual controversy necessary for a declaratory judgment action).

Inverness filed a response to BD's motion stating that it does not oppose granting BD's motion to amend its complaint. Yet Inverness stated that it could not make an informed decision whether to support the motion because it had not received sufficient discovery from BD regarding the interference proceeding.

Because Inverness does not oppose BD's request to amend its complaint, the court will grant the motion. The court is unaware of any reason "such as undue delay, bad faith or dilatory motive on the part of the movant, repeated failure to cure deficiencies by amendments previously allowed, undue prejudice to the opposing party by virtue of allowance of the amendment, futility of amendment, etc." upon which the court may exercise its discretion to deny BD's motion to amend. Foman v. Davis, 371 U.S. 178, 182, 9 L. Ed. 2d 222, 83 S. Ct. 227 (1962). Inverness's concern that removal of the Rosenstein patent from this action could deprive it **[**20]** of discovery on the Campbell patent is neither supported nor a proper grounds for denying BD's motion to amend.

B. Claim Construction

Evaluation of whether Inverness infringes the claims of the Campbell patent requires a two step analysis. Markman v. Westview Instruments, Inc., 52 F.3d 967, 976 (Fed. Cir. 1995). First, the court must construe the claims of the Campbell patent. Id. at 976. Second, the court must compare the claims, as construed by the court, to the Inverness products or process that BD alleges infringe to determine whether all of the claim limitations are present. Id. This second step, analyzing the allegedly infringing product or process, presents a question of fact. Tanabe Seiyaku Co. v. United States Int'l Trade Comm'n, 109 F.3d 726, 731 (Fed. Cir. 1997). If the court finds that there is no genuine issue of material fact regarding the allegedly infringing products, then the court's analysis of infringement reduces simply to construing the claims and applying that construction to the allegedly infringing products on summary judgment. Athletic Alternatives Inc. v. Prince Mfg., Inc., 73 F.3d 1573, 1578 (Fed. Cir. 1996). **[**21]**

In construing a patent's claims, the court must begin with intrinsic evidence, such as the patent itself, the patent specification, and the prosecution history. Vitronics Corp. v. Conceptronic, Inc., 90 F.3d 1576, 1582 **[*267]** (Fed. Cir. 1996). First, the court examines the patent claims and must accord the words of the claim their plain and ordinary meaning to one of skill in the art. Id.; Intellicall, Inc. v. Phonometrics, Inc., 952 F.2d 1384, 1387 (Fed. Cir. 1992). Technical terms included in the patent claims are to be furnished the meaning given by those experienced in the field of the invention. Hoechst Celanese Corp. v. BP Chems, Ltd., 78

F.3d 1575, 1578 (Fed.Cir. 1996). The plain and ordinary meaning of the words of the claim may be avoided, however, if patentee chooses to be his own lexicographer and assigns a different meaning to the claim terms in either the patent specification or prosecution history. Vitronics, 90 F.3d at 1582.

After consideration of the patent claims, courts consider the remaining intrinsic evidence, including the patent specification and prosecution history. Interactive Gift Express, Inc. v. CompuServe Inc., 256 F.3d 1323, 1331 (Fed. Cir. 2001). **[**22]** "If the claim language is clear on its face, then [the court's] consideration of the rest of the intrinsic evidence is restricted to determining if a deviation from the clear language of the claims is specified." Id. Such a deviation would include a patentee using a term in a manner other than its plain and ordinary meaning or if the prosecution history reveals that the patentee forfeited a particular claim construction to distinguish a prior art reference. Id.

If the language of the claim is unclear on its face, then the court may consider the claim specification and prosecution history to resolve the claim's ambiguity. Id. Patent claims should be construed in a manner that is consistent with the its specification, for "the construction that stays true to the claim language and most naturally aligns with the patent's description of the invention will be, in the end, the correct construction." Renishaw PLC v. Marposs Societa' per Azioni, 158 F.3d 1243, 1250 (Fed. Cir. 1998). The specification should not be used, however, to read into the patent claims a limitation that exists only in the specification or the preferred embodiment of the invention. Intervet Am., Inc. v. Kee-Vet Lab., Inc., 887 F.2d 1050, 1053 (Fed. Cir. 1989). **[**23]** In contrast, a patentee's statements disclaiming a more expansive scope of the claims during the patent's prosecution can be used to limit the claim's breadth. Southwall Techs. Inc. v. Cardinal IG Co., 54 F.3d 1570, 1576 (Fed. Cir. 1995) ("The prosecution history limits the interpretation of claim terms so as to exclude any interpretation that was disclaimed during prosecution.").

Evidence other than the patent claims, the specification, and prosecution history is considered extrinsic evidence. Extrinsic evidence may be used to assist the court in understanding the underlying technology. Pitney Bowes, Inc. v. Hewlett-Packard Co., 182 F.3d 1298, 1309 (Fed. Cir. 1999). A dictionary is extrinsic evidence that may be used to aid the court's analysis of the plain meaning of claim terms. Interactive Gift Express, 256 F.3d at 1332 n.1. Any other use of extrinsic evidence, however, is limited to those situations in which the intrinsic evidence is inadequate to unambiguously construe the patent's claims. "Relying on extrinsic evidence to construe a claim is 'proper only when the claim language remains genuinely ambiguous after consideration **[**24]** of the intrinsic evidence.'" Id. at 1332 (quoting Bell & Howell Document Mgmt. Prods. Co. v. Altek Sys., 132 F.3d 701, 706 (Fed. Cir. 1997)). Even in this situation, "extrinsic evidence may never be used 'for the purpose of varying or contradicting the terms in the claims.'" Id. (citing Markman, 52 F.3d at 981.).

[*268] 1. The process claims -- "contacting"

Inverness contends that the proper construction of the term "contacting," as that term is used in independent claims 1, 14, and 59 of the Campbell patent, is "directly applying the sample and tracer to the binder." Its argument in favor of this construction is twofold. First, Inverness argues, with the support of its expert, Dr. Gunter, that the claims of the Campbell patent teach only the direct application of sample and tracer to the binder to create a "spot assay." Second, Inverness argues that because "lateral-flow" technology of the Rosenstein patent and the Inverness products was not developed at the time the Campbell patent issued in 1987, the term "contacting" should not include this later developed technology.

Dr. Gunter contends that the Campbell patent discloses only **[**25]** a "spot assay" and that therefore "[a] person of ordinary skill in the art would understand that the proper way to interpret 'contacting' is that the user must directly apply the sample and tracer to the 'spot' of binder." He draws support for this conclusion from the patent's specification, and states, "after a thorough review of the Campbell patent, it is my opinion that the specification is directed to

and only discloses 'spot' assays" Similarly, he states that "the specification describes that in use, the sample must be directly applied to the 'spot' of binder. . . . The specification also explains that the tracer is in a solution which is also directly applied to the 'spot' of binder." Dr. Gunter also finds support for his interpretation of "contacting" in the only figure of the Campbell patent, which depicts three spots of binder on a rectangular solid support, and in Example III of the patent, which teaches the user to pipet both urine and the tracer directly onto the spot of binder. According to Dr. Gunter, it is clear from the patent's examples and specification "that if the user does not directly apply the sample and tracer to the 'spot,' the assay would not work. **[**26]** "

Inverness also finds support for his conclusion that "contacting" must mean "directly contacting" from the prosecution history of the Rosenstein patent. As set forth above, during the prosecution history of the Rosenstein patent, BD repeatedly acknowledged that the Campbell patent does not disclose the transfer of the tracer and sample to the binder across the solid support by capillary action.

Last, in support of Dr. Gunter's construction of the term of "contacting," Inverness argues that any other construction that might result in the inclusion of its one-step lateral flow assays within the bounds of the Campbell patent is untenable. According to Inverness, because lateral flow assays were unknown at the time the Campbell patent issued, the term "contacting" must be construed to prevent its application to this later-developed technology. Inverness finds support for this argument in this court's opinion in IPPV Enters., LLC, v. Echostar Communications Corp., 106 F. Supp. 2d 595, 605 (D. Del. 2000). In IPPV Enters., the plaintiff's patent was addressed to encrypting television program signals. At the time of the invention, the television industry was broadcasting **[**27]** its signals in analog form. The patent exclusively discussed the encrypting of analog television signals. Subsequently, the industry began commercial broadcasts of digital signals. The defendants operated a direct broadcast satellite subscriber television service that transmitted encrypted video signals in a digital format. In response to plaintiff's infringement claim, defendants argued that because the patent exclusively discusses the encryption of analog television signals, the court should construe the phrase "television program signal" in the claim at issue **[*269]** as meaning "analog television program signal." The court agreed with defendants, but noted that this construction would not preclude plaintiff's claim that defendants infringed under the doctrine of equivalents. Id. at 605-06. In identifying its construction, the court relied upon two principles of claim construction; that the literal meaning of a claim is fixed at its issuance, see Al-Site Corp. v. VSI Int'l, Inc., 174 F.3d 1308, 1320 (Fed. Cir. 1999), and that broadly written claims may, in certain instances, be construed to limit their scope to the technologies disclosed in the patent specification, **[**28]** see Wang Labs., Inc. v. America Online, Inc., 197 F.3d 1377, 1383 (Fed. Cir. 1999). IPPV Enters., 106 F. Supp. 2d at 605. Inverness contends that the same principles are relevant here and that therefore the meaning of "contacting" must be limited to cover spot assays, because only spot assays are revealed in the patent specification and the lateral-flow technology was not yet developed when the Campbell patent issued.

BD responds by arguing that the plain meaning of "contacting" is not limited to Dr. Gunter's suggested interpretation of "directly contacting." According to BD, the court must begin with meaning of the term "contacting" as it was known to those skilled in the art at the time the patent issued. BD contends that because the term "contacting" has no specialized meaning and has not changed since the Campbell patent issued, it should be interpreted consistently with its plain meaning. BD suggests that "contacting" is defined as "the coming together or touching of two objects or surfaces." American Heritage Dictionary of the English Language, 287 (Houghton Mifflin 1981).

Furthermore, BD notes that Inverness's suggested interpretation violates **[**29]** the rule of claim construction that the specification should not be used to import limitations into the claim language. According to BD, the Campbell patent's disclosure of only alleged "spot assays" cannot limit the breadth of the plain language of its claims or alter the meaning of "contacting." See Markman, 52 F.3d at 980 ("The written description part of the specification itself does not

delimit the right to exclude. That is the function and purpose of claims.").

In evaluating the meaning of the term "contacting," as used in claims 1, 14, and 59 of the Campbell patent, the court must begin with the plain meaning of the claims. Vitronics, 90 F.3d at 1582. Inverness has not suggested that "contacting" had a specialized meaning to those with skill in the art at the time the Campbell patent was issued. Nor has it suggested that elsewhere in the Campbell patent the patentee assigned a particular meaning to the term "contacting." Thus the court adopts the definition proffered by BD, "the coming together or touching of two objects or surfaces" as its plain meaning.

Inverness's arguments that the term contacting has a more limited definition find their **[**30]** root in two places: the specification of the Campbell patent and BD's statements about the Campbell patent while prosecuting its application for the Rosenstein patent. Beginning with the Campbell patent, Dr. Gunter's report finds no support for his definition of the term in the patent claims themselves, but instead looks to the written description of the patent, a figure included with that description, and the examples given of how to employ the invention. The uses of the patent specification to define the terms of the patent claims is limited. If the claims are clear, the patent specification can only be used to determine whether a deviation from the claims is required, such as when the specification uses a term in other than its plain and ordinary meaning. Interactive **[*270]** Gift Express, 256 F.3d at 1331. If the claims are unclear, then the patent specification can be used more liberally to aid the court in resolving ambiguities and identifying a claim construction that properly delimits the bounds of the patentee's invention. Renishaw PLC, 158 F.3d at 1250. Inverness has not explained why the uses of the term "contacting" in claims 1, 14, and 59 are unclear **[**31]** or ambiguous on their face. Thus, there is no reason to use the patent specification to explain the claims and the claim language should be accorded its plain meaning.

Even were the court to find that the claim terms are ambiguous and employ the patent specification to resolve that ambiguity, Dr. Gunter's suggested definition of contacting still lacks support. Patent specifications cannot be used to import into the patent claims a limitation suggested only by the specification or the preferred embodiment of the invention. Intervet Am., 887 F.2d at 1053. In this case, Inverness is attempting to use the fact that the patent specification's written description, figure, and examples all disclose that a user should directly contact the sample and tracer to the binder. Because doing so would have the effect of diminishing or limiting the plain meaning of the claims, the court refuses to import into its claim construction a limitation purported to be required by the patent's specification.

Inverness also finds support for its definition of "contacting" in BD's statements to the PTO during the Rosenstein patent that a person of ordinary skill in the art at the time of the **[**32]** Campbell patent would not have known of using capillarity through the solid support to bring the analyte, tracer, and binder into contact. However, statements made during the prosecution history of another patent are extrinsic evidence. Such statements would only be intrinsic evidence if the patentee used those statements in the prosecution of the contested patent. See Georgia-Pacific Corp. v. United States Gypsum Co., 195 F.3d 1322, 1332 (Fed. Cir. 1999). "Relying on extrinsic evidence to construe a claim is 'proper only when the claim language remains genuinely ambiguous after consideration of the intrinsic evidence.'" Interactive Gift Express, 256 F.3d at 1332 (citation omitted). This court finds that the claim language is not genuinely ambiguous and thus resort to extrinsic evidence to construe the term "contacting" is unwarranted. n1

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n1 While the court acknowledges that the position currently taken by BD on the meaning of the claims of the Campbell patent may be inconsistent with its position during the Rosenstein prosecution, and that such inconsistency might be relevant to other relief for Inverness, it does not change the meaning of the terms the court is asked to construe for purposes of this summary judgment motion.

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Furthermore, Inverness's reliance on this court's opinion in IPPV Enters. is misplaced. While it is true that the literal meaning of a claim is fixed upon the issuance of the patent, Al-Site Corp., 174 F.3d at 1320, IPPV Enters., 106 F. Supp. 2d at 605, the important distinction here is the nature of the disputed term. Inverness disputes the meaning of the term "contacting." In IPPV Enters., the parties disputed the term "television program signal." While it was asserted that the meaning of the latter had changed over time due to technological progress, the meaning of the former has not. While technological progress in the field of immunoassays may have been significant, it has not altered the meaning of the term "contacting" and therefore has not restrained the types of contacting covered by the Campbell patent.

[*271] Inverness also relies on the statement in IPPV Enters, that broadly written claims may be construed to limit their scope to the technologies disclosed in the patent specification. IPPV Enters., 106 F. Supp. 2d at 605 (citing Wang Labs., 197 F.3d at 1383). n2 The court in IPPV Enters. employed **[**34]** this principle to construe the phrase "television program signal" as meaning "analog television program signal." Inverness argues this case is analogous because the patent specification in this case discloses only "spot assays" and lateral-flow technology had not been developed at the time. While it may be true that lateral-flow technology is not disclosed in the specification of the Campbell patent, the court's primary inquiry is into the scope of the claims themselves. Markman, 52 F.3d at 980 ("The written description part of the specification itself does not delimit the right to exclude. That is the function and purpose of claims."). Because the court has concluded that the meaning of the term "contacting" is clear, the court need not resort to the claim specification unless it contains some indication that the claims do not use the term "contacting" in its ordinary sense. Interactive Gift Express, 256 F.3d at 1331.

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n2 For the court's discussion of the limited nature of the Federal Circuit's holding in Wang Labs., see Intel v. Broadcom, No. 00-796- **RRM, 2001 U.S. Dist. LEXIS 18936, 2001 WL 1388439,** *27-28 (D. Del. Nov. 6, 2001).

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Thus, the court finds that the term "contacting," as used in claims 1, 14, and 59 of the Campbell patent means "the coming together or touching of two objects or surfaces." The term does not require a user of the Campbell patent to directly apply the solution of analyte and the tracer to a spot of binder; it only requires that those components come together or touch.

2. The product claims -- "a tracer"

Inverness claims that the proper construction of the term "tracer" in claim 38 of the Campbell patent is "a tracer that is a separate component from (*i.e.*, is not attached to) the solid support." Inverness's expert, Dr. Gunter, argues that this construction is suggested by the structure of claim 38, in which a semicolon separates the clause introducing the tracer from the clause explaining the solid support. Furthermore, Dr. Gunter notes that "kit" claims are typically understood to involve separate components. He cites Jeffrey G. Sheldon, How to Write a Patent Application, Practising Law Institute, New York City (December 1995), in support of his understanding of "kit claims." According to that publication, "many products are sold unassembled or contain a variety of parts **[**36]** that are used together. Kit claims are particularly valuable for those products." Based on these facts, Dr. Gunter alleges that the separate listing of the two components requires an interpretation of claim 38 that the tracer not be located on the solid support. Dr. Gunter believes that this is the proper construction of claim 38 because the patent specification never discloses a configuration in which the tracer is located on, or attached to, the solid support. He finds further support in the prosecution history of the

Rosenstein patent, in which BD stated that Campbell does not disclose that the tracer can be placed on the solid support and be made to flow to the binder area, as is claimed in Rosenstein.

BD argues that the neither term "separate" nor "attached" is used in claim 38 to describe the relation between the tracer and the solid support, and thus the claim does not require any particular relation between those components of the invention. It also contests Inverness's assertion that the fact claim 38 is described as a "kit" claim provides support for the conclusion **[*272]** that the tracer and solid support must be separate components of the invention.

Beginning with the language **[**37]** of claim 38, Inverness's proposed construction is premised on the description of the claim as a "kit claim" and the use of a semicolon to divide the tracer clause from the solid support. Taking these points in order, Dr. Gunter's support for his hypothesis that "kit" claims must contain separate elements is the PLI publication by Jeffrey Sheldon. The PLI publication, however, is extrinsic evidence and thus should not be considered until the court has concluded, after considering the intrinsic evidence, that the claims remain ambiguous. n3 Second, the use of a semicolon in claim 38 is a grammatical tool for separating two independent clauses and does not necessarily indicate that the items on opposing sides of the semicolon must also be physically separated. Thus, the court finds that neither the description of the claim as a "kit," nor the use of a semicolon imparts a characterization of the physical relationship between the tracer and the solid support. Instead, the court finds that the plain meaning of the claim's use of only a semicolon to differentiate the tracer from the solid support is that claim 38 does not require any particular physical relationship between those components **[**38]** of the assay.

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n3 Even as extrinsic evidence, however, the PLI publication is of dubious value. It was published eight years after the Campbell patent was issued and thus cannot be said to be evidence of the meaning of terms at the time the patent was issued. See Al-Site Corp., 174 F.3d at 1320. Moreover, PLI publications are generally intended for lawyers, and thus it is unlikely that a person of skill in the art of immunoassays would be knowledgeable of the publication's contents or import. See Pall Corp. v. PTI Techs., Inc., 259 F.3d 1383, 1393 (Fed. Cir. 2001) ("In claim construction, a claim is interpreted from the perspective of one of ordinary skill in the art.").

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Inverness's reliance on the specification of the Campbell patent and the prosecution history of the Rosenstein patent to support its construction of claim 38 is unhelpful for the same reasons this evidence does not support its argument on the construction of the process claims. While it is true that the patent **[**39]** specification reveals only the attachment of binder antibodies to the solid support and nowhere suggests that the tracer might also be attached, this fact does not require that the proper construction of claim 38 be limited to those immunoassays that keep the tracer and solid support separate. Once again, the patent specification cannot be used to limit a claim in a manner suggested only in the specification or preferred embodiment of the invention. Intervet Am., 887 F.2d at 1053. Neither can the prosecution history of a later patent such as Rosenstein, which is extrinsic evidence, alter the clear meaning of the terms in the claim of an earlier patent. See Interactive Gift Express, 256 F.3d at 1332. Thus, the court finds that neither the Campbell patent's specification nor the Rosenstein patent's prosecution history alters the clear meaning of claim 38. Claim 38 reveals the use of a tracer and a solid support including a binder as an immunoassay, but it does not require that the tracer and solid support have any particular physical relationship. Therefore, the court finds that Inverness's suggested interpretation of claim 38, that the claim requires **[**40]** a tracer separate from the solid support, is unsupported.

C. Summary Judgment on Non-Infringement

Inverness's motion seeks summary judgment that its products do not infringe the asserted claims of the Campbell patent. Inverness is entitled to summary judgment if the "pleadings, depositions, answers to interrogatories, and admissions on file, together **[*273]** with the affidavits, if any, show that there is no genuine issue as to any material fact and the moving party is entitled to judgment as a matter of law." Fed. R. Civ. P. 56(c). Rule 56 requires that Inverness, as the moving party, bear the initial burden of informing the court of the basis for its motion and demonstrate the absence of a genuine issue of material fact. Celotex Corp. v. Catrett, 477 U.S. 317, 323, 91 L. Ed. 2d 265, 106 S. Ct. 2548 (1986). A genuine issue of material fact is present when "the evidence is such that a reasonable jury could return a verdict for the nonmoving party." Anderson v. Liberty Lobby, Inc., 477 U.S. 242, 248, 91 L. Ed. 2d 202, 106 S. Ct. 2505 (1986). The evidence must be viewed in the light most favorable to BD, as the non-moving party. Matsushita Elec. Indus. Co. v. Zenith Radio Corp., 475 U.S. 574, 587-88, 89 L. Ed. 2d 538, 106 S. Ct. 1348 (1986); **[**41]** Transmatic, Inc. v. Gulton Indus., Inc., 53 F.3d 1270, 1274 (Fed. Cir. 1995). Once the moving party has shown an absence of genuine issue of material fact, it is incumbent upon the non-moving party, BD, to "come forward with 'specific facts showing that there is a genuine issue for trial.'" Matsushita Elec. Indus. Co. v. Zenith Radio Corp., 475 U.S. 574, 587, 89 L. Ed. 2d 538, 106 S. Ct. 1348 (1986) (citing Rule 56(e)).

Establishing infringement will require BD to prove "that every limitation of the claims asserted to be infringed is found in the accused device." Glaxo, Inc. v. Novopharm, Ltd., 110 F.3d 1562, 1566 (Fed. Cir. 1997). Thus, to demonstrate its entitlement to judgment as a matter of law that its accused products do not infringe, Inverness must show that "after viewing the alleged facts in the light most favorable to the non-movant, there is no genuine issue whether the accused device is encompassed by the claims." Pitney Bowes,, 182 F.3d at 1304.

In this case, Inverness contends that it is entitled to summary judgment on the product claims because the user of its products does not "directly contact" the **[**42]** sample and tracer to the binder area of the solid support. Rather, the user contacts the sample to the absorbent wick of the solid support and the sample migrates across the solid support, where it locates both the tracer and the binder area. Inverness also argues it is entitled to summary judgment on the process or "kit" claims because the solid support and tracer are not separate components of its product.

BD responds that Inverness is not entitled to summary judgment because both of its arguments rest on an erroneous claim construction and, in any event, there are genuine issues of material fact. BD's claim construction arguments have been summarized and addressed above. Its alleged genuine issue of material fact concerns whether the tracer is located on the solid support in Inverness's products. According to BD, even under Inverness's proposed construction that claim 38 of the Campbell patent is only infringed if the tracer and the solid support are separate components of the product, Inverness infringes because the tracer in Inverness products is indeed on a separate pad and not the solid support.

The court finds that summary judgment of non-infringement of the asserted product **[**43]** and process claims of the Campbell patent is not appropriate. First, the court has concluded that claims 1, 14, and 59 do not require that the user "directly contact" the solution of analyte and/or the tracer to the binder area of the solid support. Rather, claims such as 1 and 14 require only the "coming together or touching" of the binder area of the solid support to the solution of analyte and a tracer. Similarly, claim 59, which does not explicitly require **[*274]** the "contacting" of the solid support and the tracer, does require the "coming together or touching" of the binder area of the solid support to the solution of analyte. Under this construction of "contacting," Inverness has not met its burden of showing non-infringement because the claim is infringed simply by permitting the solution of analyte and/or the tracer to come together with or touch the binder area of the solid support and meeting the other claim limitations. Inverness is therefore not entitled to summary judgment of non-infringement of claims 1, 14, and 59 of the Campbell patent.

Second, the court has concluded that claim 38, the process or "kit" claim, does not require that the tracer and solid support be separate **[**44]** components. Rather, claim 38 only requires the existence of both of those components and does not include any limitation that they must be in some particular physical relationship to one another. Under this construction of claim 38, Inverness has not meet its burden of showing non-infringment because a product infringes to the extent that it utilizes both a tracer and solid support and meets the remaining claim limitations. Inverness is therefore not entitled to summary judgment of non-infringement of claim 38 of the Campbell patent.

III. CONCLUSION

For the foregoing reasons, BD's motion for leave to amend its complaint will be granted. Inverness's motion for summary judgment of non-infringement of the Campbell patent will be denied. The court will enter an order in accordance with this opinion.

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Citation: **2001 U.S. Dist. LEXIS 21643**
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*173 F. Supp. 2d 201, *; 2001 U.S. Dist. LEXIS 18936, **

INTEL CORPORATION, Plaintiff, v. BROADCOM CORPORATION, Defendant.

Civil Action No. 00-796-RRM

UNITED STATES DISTRICT COURT FOR THE DISTRICT OF DELAWARE

173 F. Supp. 2d 201; 2001 U.S. Dist. LEXIS 18936

November 20, 2001, Decided

DISPOSITION: [1]** Intel's motion for partial summary judgment that Broadcom not licensed under '830 and '410 patents under license grants of Intel-Broadcom Joint Development Agreement granted. Parties' cross-motions for partial summary judgment with respect to whether Broadcom's sales to General Instrument Corporation licensed under Motorola Agreement granted in favor of Intel. Both parties' cross-motions for partial summary judgment with respect to whether Broadcom's sales to various Intel licensees licensed under Intel license agreements denied.

CASE SUMMARY

PROCEDURAL POSTURE: Plaintiff patent holder sued defendant corporation, alleging that the corporation was infringing, inducing infringement of, or committing acts of contributory infringement of one or more of the patent holder's patent claims for hardware and software technologies. The parties filed cross-motions for partial summary judgment.

OVERVIEW: The corporation had asserted license defenses to the patent holder's claims. The court concluded that the patent holder was entitled to partial summary judgment on its patent infringement claim for two patents because those patents were excluded from the coverage of a joint development agreement between the parties. With respect to whether the corporation's sales to another corporation were licensed under an agreement with another licensee, the court found that the other corporation was not a licensee. Thus, the patent holder was entitled to partial summary judgment on the patent infringement and other claims related to those sales. The court denied summary judgment on the claims related to the corporation's sales to other various licensees because there were genuine issues of material fact as to whether the sale transactions to those licensees conveyed any of those licensees' rights to the corporation. Moreover, the court concluded that the patent holder's license agreement with yet another licensee did not cover any sales made after its termination date and none of the identified license agreements included two of the patents.

OUTCOME: The patent holder was granted partial summary judgment on the issues of whether the corporation had a license for two patents under the parties' joint development agreement and whether the corporation's sales to another corporation were licensed. The remaining motions and cross-motions for summary judgment were denied.

CORE TERMS: patent, license, licensee, licensed, summary judgment, patent license, third party, infringing, unlicensed, foundry, subsidiary, chip, infringement, technology, specification, manufacture, effective date, matter of law, ambiguous, selling, extrinsic evidence, intellectual property, manufacturer, derivative, semiconductor, cross-license,

cross-motion, partial, license agreement, patent infringement

CORE CONCEPTS - ◆ Hide Concepts

Patent Law : Infringement : Defenses
Patent Law : Infringement : Acts of Infringement
At trial, the party asserting certain affirmative license defenses to patent infringement claim bears the burden of proving each of the defenses. Acts can be infringements only if they are carried out without authority. 35 U.S.C.S. § 271(a), (f), (g).

Civil Procedure : Summary Judgment : Summary Judgment Standard
Fed. R. Civ. P. 56 provides for summary judgment in a party's favor on all or any part of a claim when, upon reviewing the factual record developed by the parties, there is no genuine issue as to any material fact and the moving party is entitled to judgment as a matter of law. Fed. R. Civ. P 56(a), (c).

Civil Procedure : Summary Judgment : Burdens of Production & Proof
Under Fed. R. Civ. P. 56, the moving party bears the initial burden of demonstrating the absence of a genuine issue of material fact for trial. The movant may meet this burden by showing, that is, pointing out to the court, that there is an absence of evidence to support the non-moving party's case.

Civil Procedure : Summary Judgment : Burdens of Production & Proof
Once the party moving for summary judgment has made the required showing, the non-moving party must come forward with specific facts showing that there is a genuine issue for trial. A genuine issue for trial is present when the record would enable a reasonable trier of fact to find in favor of the non-moving party.

Contracts Law : Contract Interpretation : General Rules
Contract interpretation is treated as a question of law.

Patent Law : Ownership & Transfer of Rights : Assignments & Transfers
A license agreement is a contract governed by state law.

Contracts Law : Contract Interpretation : General Rules
Under California law, contract interpretation is a matter of law that is to be decided by the court. Moreover, the determination of whether a written contract is ambiguous is a question of law that must be decided by the court.

Contracts Law : Contract Interpretation : General Rules
See Cal. Civ. Code § 1636.

Contracts Law : Contract Interpretation : Ambiguities & Contra Proferentem
In construing a contract, no term shall be considered uncertain or ambiguous if its meaning can be ascertained by fair inference from the terms of the agreement. Thus, if contractual language is clear and explicit, it governs. If, however, the contract is ambiguous, extrinsic evidence regarding the parties' intent is admissible to help interpret the contract terms.

Contracts Law : Contract Interpretation : Ambiguities & Contra Proferentem
The mere fact of disagreement between the parties as to the correct interpretation of specific terms or sections of the agreement does not render it ambiguous. Rather, the determination of whether a contract is ambiguous is the court's to make.

Contracts Law : Contract Interpretation : Ambiguities & Contra Proferentem

California law allows the court to provisionally receive extrinsic evidence to aid in its determination of whether the contract at issue is ambiguous. If, after considering all of the evidence, the court determines that the contract is unambiguous, any extrinsic evidence that has been submitted for the purpose of demonstrating an ambiguity in the contract is no longer relevant. However, when the court finds that a contract is ambiguous, the extrinsic evidence may be used by the court to interpret the ambiguous terms.

Contracts Law : Contract Interpretation : General Rules

California law also requires that the court construe the contract as a whole. Cal. Civ. Code § 1641. Accordingly, in interpreting a contract, the whole of the contract is to be taken together, so as to give effect to every part, if reasonably practicable, each clause helping to interpret the other. Where two clauses of an agreement appear to be in direct conflict, it is the duty of the court to reconcile such clauses so as to give effect to the whole of the instrument.

Patent Law : Ownership & Transfer of Rights : Assignments & Transfers

While it is true that patent licenses may be implied by language or conduct of the owner, where an agreement contains a specific provision expressly defining the scope of the patent license implied licenses dealing with the same subject matter are not generally recognized.

Patent Law : Ownership & Transfer of Rights : Assignments & Transfers

Under Delaware law, the interpretation of a patent license agreement is a question of law.

Contracts Law : Contract Interpretation : General Rules

The principles of contract interpretation are well settled. Contracts must be construed as a whole, to give effect to the intentions of the parties. Where the contract language is clear and unambiguous, the parties intent is ascertained by giving the language of the contract its ordinary meaning. In upholding the intentions of the parties, a court must construe the agreement as a whole, giving effect to all provisions therein. Moreover, the meaning which arises from a particular portion of an agreement cannot control the meaning of the entire agreement where such inference runs counter to the agreement's overall scheme or plan. The court will consider extrinsic evidence to interpret the agreement only if there it finds that is ambiguity in the contract.

Civil Procedure : Summary Judgment : Burdens of Production & Proof

A moving party may satisfy its burden on summary judgment by demonstrating that there is an absence of evidence to support the case of the nonmoving party.

Patent Law : Infringement : Defenses

Patent Law : Ownership & Transfer of Rights : Assignments & Transfers

The patent law defines infringement as making, using, or selling any patented invention without authority of the patent owner. 35 U.S.C.S. § 271(a). A patent therefore confers upon its owner a bundle of rights relating to the patented invention including the rights to exclude others from making, using, or selling the subject of the patent. Patent license agreements allow third party licensees to have partial or complete access to the patented invention by providing immunity from an infringement suit on the licensed patent. A patent license is essentially a waiver of the patent owner's right to sue; the parties agree that the patent owner will allow the licensee either to make, to use, to sell (or some combination of, or derivative of, these three rights) without subjecting the licensee to an infringement suit. It is thus well settled that a valid license is a complete defense to infringement.

Patent Law : Ownership & Transfer of Rights : Assignments & Transfers

A "have made" right, which is a right carved from the term "to make" in 35 U.S.C.S. § 271(a), provides a licensee with the right to request an unlicensed third-party to manufacture a licensed good for the licensee.

Patent Law : Infringement : Defenses

Patent Law : Ownership & Transfer of Rights : Assignments & Transfers

There are two well-understood factual circumstances where unlicensed parties can attain rights that shield their actions from patent infringement based on the third parties' interaction with a licensee. First, the unlicensed third party can give its designs to a licensee and ask that licensee to use its rights "to make" and "to sell" under its license to manufacture the product for the third party (i.e. to act as a foundry for the unlicensed third party), who then resells that product to its customers. The United States Court of Appeals for the Federal Circuit holds that because the products were made and sold by a licensed party, the licensor/patent owner cannot sue the third party for infringement. Second, a licensed party that has the right to "have products made," can exercise that right by requesting an unlicensed third party to make and sell products for it, which the licensee either uses or ultimately sells to its customers. Under that arrangement, to the extent the unlicensed party makes products for the licensee, the licensor/patent owner cannot sue the unlicensed party for patent infringement.

Patent Law : Ownership & Transfer of Rights : Assignments & Transfers

The patent law doctrine of "patent exhaustion" (also called the "first sale doctrine") states that when the patentee sells a machine or instrument whose sole value is in its use, he receives the consideration for its use and he parts with the right to restrict that use. The article passes without the limit of the monopoly.

Patent Law : Ownership & Transfer of Rights : Assignments & Transfers

It is well settled that rights to a third party can be conferred through the valid exercise of a licensee's "have made rights." "Have made" rights stem from the basic rights to make, use, and sell that are typically granted in a patent license. The "have made" license permits the licensee]to engage others to do all the work connected with the production of the licensed article for him.

Patent Law : Ownership & Transfer of Rights : Assignments & Transfers

Unless the licensor contractually limits the licensees' rights, by exercising their rights to "make" and "sell" licensed products, licensees can shield an unlicensed reseller from patent infringement liability. The unlicensed reseller is shielded from liability when they purchase the allegedly infringing product from the licensee, under the doctrine of patent exhaustion. There is a separate proposition that by exercising their rights to have licensed products made, licensees can shield the unlicensed manufacturer who makes the products for them and subsequently sells the products to the them from infringement liability by impliedly licensing the otherwise infringing actions.

Patent Law : Ownership & Transfer of Rights : Assignments & Transfers

The legal effect of patent licensees exercising their "have made" rights by commissioning a third party to make licensed products is very different from the legal effect of licensees purchasing allegedly infringing products from a third party. In the first situation, the third party's acts are noninfringing (if the "have made" rights conveyed to the licensee are unrestricted), because there is a flow of rights that authorizes the unlicensed party's otherwise infringing acts (i.e., making, selling, or using the patented invention).

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JUDGES: McKELVIE, District Judge.

OPINIONBY: McKELVIE

OPINION: [*204]

[2] MEMORANDUM OPINION**

Wilmington, Delaware
November 20, 2001

McKELVIE, District Judge

This is a patent case. Plaintiff Intel Corporation is a Delaware corporation with its principal place of business in Santa Clara, California. Intel owns U.S. Patent Nos. 4,823,201 (the 201 patent); 4,975,830 (the 830 patent); **5,894,410** (the 410 patent); 5,079,630 (the 630 patent); and 5,134,478 (the 478 patent). Defendant Broadcom Corporation is a California corporation with its principal place of business in Irvine, California. **[*205]**

On August 30, 2000, Intel filed its complaint in this case alleging that Broadcom is infringing, inducing infringement of, or committing acts of contributory infringement of one or more claims of the 201 patent, the 830 patent, the 410 patent, the 630 patent, and the 478 patent. In order to simplify the issues before the jury and to shorten the length of the jury trial, the court has since required that the trial proceed in two parts. The first trial is scheduled to begin on November 28, 2001, and will cover the 201 and the 830 patents. A subsequent trial will cover the remaining three patents.

On October 10, 2000, Broadcom moved to dismiss Intel's **[**3]** complaint or, in the alternative, to transfer the action to the United States District Court for the Northern District of California. After eleven months of discovery, the court heard oral argument on Broadcom's motion on September 24, 2001. In a memorandum opinion dated October 9, 2001, the court denied Broadcom's motion. Broadcom subsequently answered Intel's complaint on October 23, 2001. As Broadcom had indicated in earlier interrogatory responses, the answer included a number of affirmative defenses relating to license agreements.

In anticipation of these affirmative defenses, Intel has filed three sets of partial summary judgment motions relating to Broadcom's license defenses. Broadcom has cross-moved for summary judgment on the latter two of these motions.

On September 21, 2001, Intel moved for summary judgment that Broadcom's allegedly infringing products are not licensed under the 830 or 410 patents. Intel argues that the scope of the January 22, 1995 Intel Product Development and License Agreement (the "Joint Development Agreement") between Intel and Broadcom does not include a license for Broadcom to make, sell, or use the accused products in this suit under either **[**4]** the 830 or '401 patent. Broadcom filed its answering brief on October 12, 2001 and later

filed a corrected answering brief on October 18, 2001. Intel filed its reply brief in support of its summary judgment motion on October 22, 2001.

On September 28, 2001, Intel moved for summary judgment that Broadcom's allegedly infringing products are not licensed under an Intel-Motorola license agreement (the "Motorola Agreement"). This motion relates to Broadcom's affirmative defense that its products accused of infringing the asserted claims of the 478, 201, and 630 patents are licensed by Intel to the extent those products were made for or sold to General Instrument Corporation, a wholly owned subsidiary of Motorola, Inc, pursuant to a June 9, 1997 license agreement between Intel and Motorola that gives Motorola the right to "have [Licensed Products] made" for it. On October 18, 2001 Broadcom cross-moved for summary judgment that the accused products it sells or has sold to General Instrument Corporation are licensed under the Motorola Agreement. On the same day, Broadcom filed its answering brief in opposition to Intel's motion and opening brief in support of its cross-motion for partial **[**5]** summary judgment. On October 25, 2001, Intel filed its reply brief in support of its motion and answering brief in opposition to Broadcom's cross-motion. On November 1, 2001, Broadcom replied to Intel's answering brief.

On October 16, 2001, Intel moved for summary judgment that Broadcom's accused products are not licensed under Intel license agreements with Sony Corporation, NEC Corporation, Samsung Corporation, Siemens AG, and Compaq Corporation to the extent those products were made for or sold to those companies. On October 30, 2001, Broadcom **[*206]** cross-moved for summary judgment that Broadcom's sales to various Intel licensees of accused products that qualify as "Licensed Products" under the individual terms of the license agreements are licensed by Intel and are therefore noninfringing. The Intel licensees listed by Broadcom are the five companies referred to in Intel's summary judgment motion and the following seven additional companies: AT&T Corporation, Hayes Microcomputer Products, Inc., Hewlett-Packard Corporation, Hitachi Ltd., Hyundai Electronics Industries Co., Ltd., Mitsubishi Electric Corporation, and N.V. Phillips Gloeilampenfabrieken. Also on October 30, Broadcom filed **[**6]** its answering brief in opposition to Intel's summary judgment motion and its opening brief in support of its cross-motion. On November 6, 2001, Intel filed a reply brief in support of its motion and answering Broadcom's cross-motion. Broadcom filed its reply brief in support of its cross-motion on November 13, 2001.

These five motions for partial summary judgment on license defenses are now fully briefed. This is the courts decision on those motions.

I. DISCUSSION

A. Standard for Decision

At trial, as the party asserting certain affirmative license defenses, Broadcom would bear the burden of proving each of these defenses. See McCoy v. Mitsuboshi Cutlery, Inc., 67 F.3d 917, 920 (Fed. Cir. 1995). Acts can be infringements only if they are carried out "without authority." 35 U.S.C. § 271(a), (f), (g). Thus for each of the license defenses it asserts, Broadcom must prove at trial either that it has a license from Intel that authorizes it to make, use, and sell its accused products or that its development and subsequent sale of accused products to Intel licensees was authorized under those licensees' licenses with Intel.

Federal **[**7]** Rule of Civil Procedure 56 provides for summary judgment in a party's favor on "all or any part" of a claim when, upon reviewing the factual record developed by the parties, there is "no genuine issue as to any material fact and the moving party is entitled to judgment as a matter of law." Fed. R. Civ. P 56(a), (c).

Under Rule 56, the moving party bears the initial burden of demonstrating the absence

of a genuine issue of material fact for trial. See Anderson v. Liberty Lobby, Inc., 477 U.S. 242, 256, 91 L. Ed. 2d 202, 106 S. Ct. 2505 (1986). The movant may meet this burden by "showing -- that is, pointing out to the [] court -- that there is an absence of evidence to support [the non-moving party's] case." Celotex Corp. v. Catrett, 477 U.S. 317, 322-23, 91 L. Ed. 2d 265, 106 S. Ct. 2548 (1986).

Once the moving party has made the required showing, the non-moving party "must come forward with 'specific facts showing that there is a genuine issue for trial.'" Matsushita Elec. Indus. Co., Ltd. v. Zenith Radio Corp., 475 U.S. 574, 587, 89 L. Ed. 2d 538, 106 S. Ct. 1348 (1986). A genuine issue for trial is present when the record **[**8]** would enable a reasonable trier of fact to find in favor of the non-moving party. Anderson, 477 U.S. at 248.

Many of the issues presented in the parties' motions are essentially questions of contract interpretation. Contract interpretation is treated as a question of law. Klair v. Rees, 531 A.2d 219, 222 (Del. 1987) (applying Delaware law); see also United States v. King Features Entmn't, Inc., 843 F.2d 394, 398 (9th Cir. 1988) (applying California law). When necessary, the court will determine whether, as a matter of the applicable law under each **[*207]** agreement, extrinsic evidence may be considered by a fact finder to interpret ambiguous sections of a license agreement or whether the agreement at issue is unambiguous.

In this case, in order for the court to grant summary judgment in favor of Intel on Broadcom's license defenses, Intel must show that no reasonable fact finder could return a verdict in Broadcom's favor on its license defense. In order to grant summary judgment in favor of Broadcom on its license defenses, Broadcom must show that no reasonable fact finder could return a verdict in Intel's favor on Broadcom's license defenses. **[**9]** With these standards in mind, the court will turn to the substance of the parties' motions.

B. Should the Court Grant Intel's Motion for Summary Judgment That Broadcom's Accused Products Are Not Licensed Under the '830 and '410 Patents?

1. The Intel-Broadcom Joint Development Agreement

On January 22, 1995, Intel and Broadcom entered into a joint development agreement entitled "Intel Product Development and License Agreement." While the parties dispute the intended and ultimate scope of the agreement, according to the agreement itself, the Joint Development Agreement contemplates each party exchanging proprietary technology to jointly develop a specific 100 Mbps Ethernet silicon chip ("the Product").

In order to accomplish this goal, pursuant to the agreement, Intel agreed to deliver certain of its hardware and software technologies to Broadcom (the "Intel Deliverables") and Broadcom agreed to deliver certain of its digital signaling technology to Intel (the "Broadcom Deliverables"). That much is clear from the Joint Development Agreement's section entitled "Recitals," which states in full that:

> Broadcom is a developer of certain digital signaling technology; and
>
> Intel **[**10]** is a developer of certain hardware and software technologies. Intel desires to license Broadcom's above technology for use in jointly developing with Broadcom a 100 Mbps Ethernet silicon chip.
>
> Intel also desires to grant a limited license to its foregoing technologies to Broadcom for Broadcom to manufacture the foregoing chip and for each Party to make, use, market, sell, and distribute such chip subject to this Agreement.

> The Parties also desire that Intel use the above license from Broadcom to create a 100 Mbps Ethernet adapter card based on such chip for Intel to exclusively market and distribute subject to the terms herein and market other software and hardware Intel products related thereto.

In section 1.15, the Joint Development Agreement defines the jointly developed "Product" as "only the silicon chip defined by the Product Specifications developed pursuant to this Agreement, which chip is derived from Broadcom Deliverables and includes certain Intel Deliverables and Upgrades." The "Product Specifications" are defined as "the specifications in PHY 100 EAS Release Revision 1.3 (October 1994) and Data Sheet for the Product," both of which were attached to the Joint **[**11]** Development Agreement as Exhibit B.

The most relevant sections of the Joint Development Agreement to the parties' dispute are sections 5.2 and 5.4, which are respectively entitled "License to Broadcom" and "Patent Covenant." The court will reproduce each section below.

Section 5.2 states:

> Intel grants to Broadcom a royalty-free, nonexclusive, perpetual, worldwide, nontransferable, **[*208]** revocable for material breach license to make, use, sell, reproduce, modify for internal and external use, advertise, market, make and have made by third parties to supply Broadcom hereunder and not for any such third parties to compete, directly or indirectly, with Intel, Broadcom Developments of, make and have made by third parties to supply Broadcom hereunder and not for any such third parties to compete, with Intel, incorporate, or license, and distribute the Intel Deliverables in physical form solely as an integral part of or incorporated in products to end users directly or indirectly through Broadcom's distribution channel of, without limitation, distributors, resellers, OEMS and representatives, subject to the exclusivity requirements and limitations set forth in Exhibit F.

Section **[**12]** 1.3 of the Joint Development Agreement indicates that the defined term "Broadcom Developments" means "hardware, derivative works, updates, enhancements, translations, and/or revisions of Intel Deliverables which incorporate or are derivatives of Intel Deliverables, developed by or for Broadcom and subject to the exclusivity requirements and limitations set forth in Exhibit F." Section 5.1 of the agreement grants an identical license to Intel with respect to Intel Developments of the Broadcom Deliverables. Thus these two sections, taken together, demonstrate that the agreement contains a mutual license between the parties to effectuate the parties' joint development effort.

Section 5.4, the patent covenant section, states:

> Each Party agrees that with respect to any patent which, as of the Effective Date, it owns or under which it has the right to grant licenses of the scope of the licenses granted in this Agreement, or any patent which may later issue which is related to the Product and based, in whole or part, on the IEEE 802.3 100 BaseT specification, it will not assert against the other Party to restrict its rights under this Agreement, nor against such Party's subsidiaries, **[**13]** licensees, or vendees, mediate or immediate, with respect to the Product, any claims for infringement based on the manufacture, use, or sale of any apparatus made of sold by, for or under license from that Party.

Section 5.5 further qualifies the intellectual property license. It contains a provision that states that "the license grants in this Agreement do not include any right . . . to Intel component level microprocessor technology . . . including, but not limited to, the Intel X86 microprocessor chip series"

2. The Parties' Positions

a. Intel's Position

Intel argues that the Joint Development Agreement does not grant to Broadcom any license to the 830 or 410 patents based on two limitations in section 5.4 (the patent covenant section) of the agreement. Under section 5.4, the patent license is limited to (i) patents that were owned by a party at the time of the agreement (January 22, 1995), or later issued; and (ii) patents that relate to the Product defined by the agreement and are based on the IEEE 802.3 100 BaseT specification. The IEEE 802.3 100 BaseT specification is the networking standard for 100 Mbps Fast Ethernet that has been agreed upon by **[**14]** the 802.3 working group of Institute of Electrical and Electronics Engineers.

Intel argues that because the 830 patent issued in 1990, but was not acquired by Intel until December 28, 1998, the 830 patent is not licensed under the patent covenant section of the agreement. The 830 patent was acquired by Intel **[*209]** through the merger with, and later liquidation of, Dayna Communications, Inc. The 830 patent issued on December 4, 1990 and listed Dayna Communications as the Assignee. On October 10, 1997, Intel and Dayna entered into a Plan of Merger under which Dayna Communications would continue as a wholly owned subsidiary of Intel. On December 28, 1998, Dayna Communications was dissolved, giving Intel "all assets of Dayna, tangible and intangible, real and personal" The transfer of the 830 patent was recorded with the U.S. Patent and Trademark Office on that same day. The 830 patent automates the process by which devices on a network that can communicate by multiple formats select the optimal format for communication. Intel alleges in this lawsuit that the 830 patent covers the process known as "auto-negotiation" that is used in Broadcom's ethernet devices and described in **[**15]** the IEEE 802.3 standard.

Intel's 410 patent is entitled "Perimeter Matrix Ball Grid Array Circuit Package with a Populated Center." The 410 patent relates to a type of ball-grid-array semiconductor package that carries an integrated circuit; this technology is not described in the Joint Development Agreement's specifications defining "the Product" and is unrelated to the IEEE 802.3 BaseT specification. Therefore, Intel argues that the 410 patent is not licensed under the patent covenant in the agreement.

Intel further argues that even if the court were to find that the patent covenant grants Broadcom a license to the 830 and 410 patent, summary judgment would still be appropriate on a separate ground. The Agreement between Intel and Broadcom only grants a license "with respect to the Product" jointly developed by the parties, which is defined in the agreement as only the specific silicon chip jointly developed by Intel and Broadcom in accordance with the specifications set forth in the agreement. Intel contends that because Broadcom cannot demonstrate that any of the accused products are the "Product" jointly developed by Intel and Broadcom, partial summary judgment in its favor **[**16]** is appropriate.

b. Broadcom's Position

Broadcom takes issue with Intel's interpretation of the agreement, and argues that section 5.2, entitled "License to Broadcom," and not section 5.4 defines the scope of the license. As noted above, section 5.2 provides Broadcom with a perpetual, worldwide

license to make, use, sell, reproduce, modify, and market "Broadcom Developments" of the "Intel Deliverables." Intel Deliverables is defined in the agreement to include the VHDL hardware description code for "auto-negotiation," a key feature of the allegedly infringing products sold by Broadcom.

According to Broadcom, section 5.2 confers a license to all Intel patents (and other rights) with respect to "Broadcom Developments of . . . Intel Deliverables." Broadcom bases this argument on the meaning of Broadcom Developments, which is defined as "hardware, derivative works, updates, enhancements, translations, and/or revisions of the Intel Deliverables which incorporate or are derivatives of Intel Deliverables, developed by or for Broadcom " Broadcom contends that this definition demonstrates that the Joint Development Agreement did not only grant patent rights relating to the defined **[**17]** "Product," but instead granted a broad set of rights to make future products that are derived from the chip that is the subject of the agreement. Broadcom thus claims that Intel provided Broadcom with the allegedly infringing auto-negotiation technology along with an express license to modify Intel's technology and make derivative **[*210]** works to be incorporated into Broadcom's products. Therefore, the products accused of infringing the 830 and 410 patents cannot infringe because they are expressly licensed by Intel.

In Broadcom's view, section 5.4 does not limit, but rather supplements, Intel's license grant to Broadcom. Section 5.4 complements section 5.2 by extending the license of section 5.2 to vendees and remote users who might otherwise be subject to patent infringement claims. Accordingly, Broadcom opposes Intel's motion for summary judgment on the Joint Development Agreement, arguing that there is a material issue of fact as to the scope of the license in the agreement.

3. The Court's Decision

a. Principles of Applicable Law

A license agreement is a contract governed by state law. See Power Lift, Inc. v. Weatherform Nipple-Up Systems, Inc., 871 F.2d 1082, 1085 (Fed. Cir. 1989). **[**18]** Pursuant to Section 25 of the Joint Development Agreement, which states that "[the] Agreement will be governed and interpreted by the laws of the State of California," the court will interpret the agreement under California law.

Under California law, contract interpretation is a matter of law that is to be decided by the court. King Features, 843 F.2d at 398 ("Interpretation of a contract is a matter of law"); see also Shaw v. Regents of University of California, 58 Cal. App. 4th 44, 67 Cal. Rptr. 2d. 850, 855 (Cal. Ct. App. 1997). Moreover, "the determination of whether a written contract is ambiguous is a question of law that must be decided by the court." Brobeck, Phleger & Harrison v. Telex Corp., 602 F.2d 866, 871 (9th Cir. 1979); see also King Features, 843 F.2d at 398.

In California, "[a] contract must be interpreted so as to give effect to the mutual intention of the parties as it existed at the time of contracting, so far as the same is ascertainable and lawful." Cal. Civ. Code § 1636; see also AIU Ins. Co. v. Superior Ct., 51 Cal. 3d 807, 799 P.2d 1253, 1264, 274 Cal. Rptr. 820 (Cal. 1990) **[**19]** ("the mutual intention of the parties at the time the contract is formed governs interpretation"). "Such intent is to be inferred, if possible, solely from the written provisions of the contract." AIU Ins. Co., 799 P.2d at 1264 (citing Cal. Civ. Code § 1639). In construing a contract, "no term shall be considered uncertain or ambiguous if its meaning can be ascertained by fair inference from the terms of the agreement." Ellis v. McKinnon Broadcasting Co., 18 Cal. App. 4th 1796, 1802 (1993). Thus, "'if contractual language is clear and explicit, it governs.'" Foster-Gardner, Inc. v. National Union Fire Ins. Co., 18 Cal. 4th 857, 959 P.2d 265, 272 (Cal. 1998) (quoting Bank of the West v. Superior Ct., 2 Cal. 4th 1254, 833

P.2d 545, 552 (Cal. 1992) (citing Cal. Civ. Code § 1638)); see also Marek v. Napa Community Redevelopment Agency, 46 Cal. 3d 1070, 761 P.2d 701, 710 n.11, 251 Cal. Rptr. 778 (Cal. 1988) ("It is axiomatic that where, as here, the contract is clear and unambiguous, the intention of the parties should be ascertained from the writing itself and in such an instance extrinsic evidence is **[**20]** inadmissible."). If, however, the contract is ambiguous, extrinsic evidence regarding the parties' intent is admissible to help interpret the contract terms.

The mere fact of disagreement between the parties as to the correct interpretation of specific terms or sections of the agreement does not render it ambiguous. See, e.g., Klamath Water Users Protective **[*211]** Ass'n v. Patterson, 204 F.3d 1206, 1210 (9th Cir. 1999) ("The fact that the parties dispute a contract's meaning does not establish that the contract is ambiguous"). Rather, the determination of whether a contract is ambiguous is the court's to make.

California law allows the court to provisionally receive extrinsic evidence to aid in its determination of whether the contract at issue is ambiguous. Pacific Gas & Elec. Co. v. G.W. Thomas Drayage & Rigging Co., 69 Cal. 2d 33, 40, 69 Cal. Rptr. 561, 442 P.2d 641 (1968). If, after considering all of the evidence, the court determines that the contract is unambiguous, any extrinsic evidence that has been submitted for the purpose of demonstrating an ambiguity in the contract is no longer relevant. See Brobeck, 602 F.2d at 871 (explaining **[**21]** that under Pacific Gas, extrinsic evidence "cannot be received" if "after considering [the] preliminary evidence" the court finds the language of the contact to be unambiguous); City of Manhattan Beach v. Superior Ct., 13 Cal. 4th 232, 914 P.2d 160 (Cal. 1996) ("If the intent of the parties is clear, that will control. If not, extrinsic evidence may be considered to the extent that it informs that intent."); Olsen v. Breeze, Inc., 48 Cal. App. 4th 608, 55 Cal. Rptr. 2d 818, 830 n.5 (Cal. Ct. App. 1996) ("Parol evidence is inadmissible if the contract terms are unambiguous"). However, when the court finds that a contract is ambiguous, the extrinsic evidence may be used by the court to interpret the ambiguous terms. See Pacific Gas, 69 Cal. 2d at 40; Morey v. Vannucci, 64 Cal. App. 4th 904, 912 (1998).

California law also requires that the court construe the contract as a whole. Cal. Civ. Code § 1641; Sy First Family, Ltd. v. Cheung, 70 Cal. App. 4th 1334, 83 Cal. Rptr. 2d 340, 345 (Cal. Ct. App. 1999) ("Where practicable, the meaning of an agreement must be derived from a reading of the whole **[**22]** contract."). Accordingly, in interpreting a contract, "the whole of the contract is to be taken together, so as to give effect to every part, if reasonably practicable, each clause helping to interpret the other." Id. "Where two clauses of an agreement appear to be in direct conflict, it is the duty of the court to reconcile such clauses so as to give effect to the whole of the instrument." Ellis, 18 Cal. App. 4th at 1802; see also Brobeck, 602 F.2d at 872 (contracts should be interpreted to be "internally consistent"); Restatement of Contracts § 235(c) (1932) ("A writing is interpreted as a whole").

b. Which Section Controls the Scope of Broadcom's License?

As noted above, the key dispute between the parties is which section of the Joint Development Agreement controls the extent of Intel's patent licenses to Broadcom. Intel contends that the Section 5.4 Patent Covenant defines the patent license granted by Intel to Broadcom, while the Section 5.2 License to Broadcom deals with the rest of Intel's intellectual property rights in the Intel Deliverables. Broadcom contends that section 5.2 provides the basic grant of patent rights to Broadcom, **[**23]** while section 5.4 grants Broadcom additional patent rights above beyond those granted in section 5.2. According to Broadcom these additional patent rights were granted to ensure that Intel could not frustrate the license grant of section 5.2 by asserting patent rights against Broadcom or its vendees which would have the effect of impairing the manufacture and sale of the products licensed by section 5.2.

Section 5 of the Joint Development Agreement is entitled "License Grants." The subsections within section 5 relate to **[*212]** distinct intellectual property rights. The court briefly reviews these sections below.

In section 5.1 and 5.2, Intel and Broadcom mutually license certain of each other's proprietary technologies, defined as Intel Deliverables and Broadcom Deliverables. Exhibit B.2 lists and defines the Intel and Broadcom Deliverables. Under Exhibit B.2, Broadcom is to provide to Intel a specified data base, full chip hierarchical netlists, data sheets and design specifications, and simulation and performance evaluation results. Intel is to provide to Broadcom VHDL source code, simulation programs for certain functional design blocks, design reports, certain production test packages, **[**24]** product schematics, and certain Intel network interface card products. According to the definitions section, both parties' Deliverables were based on proprietary Technology that included a number of different types intellectual property rights, such as patents, copyrights, mask works, trade secrets, know-how, trademarks. See PP 1.3, 1.4, 1.8, 1.9. Sections 5.1 and 5.2 do not expressly set forth a patent license grant. Rather the license provided for by these two sections allows Intel to make, use, sell, and modify Intel Developments of the Broadcom Deliverables and allows Broadcom to make, use, sell, and modify Broadcom Developments of the Intel Deliverables.

Section 5.4 sets forth a mutual patent license with respect to any patent owned by a party as of January 22, 1995 or any patent which may later issue "which is related to the Product and based, in whole or in part, on the IEEE 802.3 100 BaseT specification." It is the only section in the Joint Development Agreement that expressly addresses patent rights.

While neither section 5.3 or 5.5 are central to the parties' dispute, for the sake of completeness, the court lists them here. Section 5.3 states that the parties must maintain **[**25]** any copyright notices that exist on the deliverables that they receive from each other and that the other party's copyright notice must be included in all marketing and end user documentation for the foregoing products. Section 5.5 expressly excludes from any license, any intellectual property right to Intel's component level microprocessor technology.

These sections, taken together, memorialize the parties statements of intent from the Recitals section, which states that "Intel desires to license Broadcom's above technology for use in jointly developing with Broadcom a 100 Mbps Ethernet silicon chip" and that "Intel . . . desires to grant a limited license to its foregoing technologies to Broadcom for Broadcom to manufacture the foregoing chip and for each Party to make, use, market, sell, and distribute such chip subject to this Agreement." Section 4.2, in the Ownership section of the agreement, makes it clear that sections 5.2 and 5.4 are the only relevant sections in which Intel "license[s], offer[s], or otherwise make[s] available to Broadcom the Intel Developments or Intel Technology." P 4.2.

Given that section 5.2 and 5.4 are the sections of the agreement that convey **[**26]** license rights to Broadcom, it is essential that they be interpreted consistently with each other and with the intent of the parties. The primary issue before the court is to determine whether section 5.4 unambiguously defines the scope of the patent license, whether section 5.2 unambiguously defines the scope of the patent license, or whether the agreement is ambiguous as to which section defines the scope of the patent license. For the reasons set forth below, the court finds that section 5.4 unambiguously defines the scope of Broadcom's patent license.

The agreement contemplates a joint development effort accomplished through the **[*213]** exchange of proprietary technology that includes the following intellectual property rights: patents, copyrights, mask works, trade secrets, know-how, trademarks.

See PP 1.3, 1.4, 1.8, 1.9. Licenses and restrictions on those licenses are provided for by the subsections of section 5. Section 5.2, unlike section 5.4, contains no mention of patent rights, but rather deals with the rest of Intel's intellectual property rights in the Intel Deliverables. Section 5.4 is the only section of the agreement that relates to patent rights. It explicitly sets forth **[**27]** the terms of patent licenses exchanged between the parties.

A plain reading of the agreement demonstrates that the express patent grant in section 5.4, rather than section 5.2, controls the extent of Intel's patent licenses to Broadcom. This interpretation of the license is buttressed by recent Federal Circuit authority. See State Contracting & Eng'g Corp. v. Florida, 258 F.3d 1329, 1339-40 (Fed. Cir. 2001) (noting that because patent rights and trade secret rights are distinct rights, the right to use proprietary technology does not necessarily convey any patent rights and the omission of an express provision providing for the licensing of patent rights demonstrated that the contract did not provide a license for patent rights); Hilgraeve Corp. v. Symantec Corp., 265 F.3d 1336, (Fed. Cir. 2001) (holding that no patent license was conferred where plaintiff transferred all copyright, know-how, and technical expertise with respect to software to defendant).

Broadcom nonetheless asserts that section 5.2 implicitly contains a patent license that is broader than the express patent license of section 5.4. While it is true that patent licenses may be implied **[**28]** by language or conduct of the owner, see DeForest Radio Telegraph & Telegram Co. v. United States, 273 U.S. 236, 241 (1927), where an agreement contains a specific provision expressly defining the scope of the patent license implied licenses dealing with the same subject matter are not generally recognized. See, e.g., Atlas Corp. v. United States, 895 F.2d 745, 754 (Fed. Cir. 1990) ("The existence of an express contract precludes the existence of an implied contract dealing with the same subject, unless the implied contract is entirely unrelated to the express contract"); Wal-Noon Corp. v. Hill, 45 Cal. App. 3d 605, 119 Cal. Rptr. 646, 650 (Cal. Ct. App. 1975) ("There cannot be a valid express contract and an implied contract, each embracing the same subject matter, existing at the same time.").

In asserting that section 5.2 grants Broadcom a broad license to all of Intel's patents that are related to the Intel Deliverables and Broadcom Development of those deliverables, Broadcom claims that section 5.4 supplements section 5.2. Broadcom contends that the purpose of section 5.4 is to extend the licenses of section 5.2 to provide protection **[**29]** to Broadcom's third party customers. In support of this reading, Broadcom argues that section 5.2 "only grant[s] licenses that extend to the parties," so section 5.4 was necessary to provide "protection to the parties' 'licensees or vendees, mediate or immediate.'"

The plain language of sections 5.2 and 5.4 contradicts Broadcom's argument. Section 5.2, by its terms, applies to products sold or distributed "to end users directly or indirectly through Broadcom's distribution channel of, without limitation, distributors, resellers, OEMS and representatives." P 5.2. Therefore it is incorrect that section 5.2 only extends its license protections to Broadcom. Similarly, section 5.4 states that each party will not assert patent claims for the specified licensed patents "against the other Party . . . nor against the Party's subsidiaries, **[*214]** licensees, or vendees . . . any claims for infringement" P 5.4. Therefore, section 5.4 cannot fairly be interpreted as a necessary extension of the protections of section 5.2 to the end users and distributors of Broadcom's products. Rather, the two sections are coextensive as to the third parties that they cover.

Broadcom asserts that an additional **[**30]** and unique purpose of section 5.4 is to extend the licenses of section 5.2 to include not only chip products, but larger products in which licensed chips are included. This assertion cannot be correct. Section 5.2, by its terms, licenses Broadcom Developments "in physical form solely as an integral part of or

incorporated in products to end users." Therefore, according to the plain language of the agreement, section 5.2 already grants a license to intellectual property rights that covers larger products in which the chips are placed. In addition to being contradicted by the plain language of the agreement, Broadcom's construction is inherently self-contradictory. Section 5.4, cannot, as Broadcom asserts, cover additional products, if as Broadcom also asserts, section 5.2 already licenses all products that include, or are in any way derived from, or include a derivative of, Intel's Deliverables. Accordingly, section 5.4 cannot be fairly interpreted as extending the protections of section 5.2 to "additional products."

The proper interpretation of the Joint Development Agreement must give effect to each section of the contract. In light of the above analysis, if the court were to adopt **[**31]** Broadcom's interpretation of the agreement, section 5.4 would be rendered extraneous and unnecessary. Broadcom's reading would also create two patent licenses (the implied patent license in section 5.2 and the express patent license in section 5.4) within the same agreement whose scopes are in conflict. The implied license of section 5.2 is unbounded, while the express license of section 5.4 is broad, but has limits. If the court were to find that section 5.2 confers to Broadcom a broad patent license that covers all products that are derived from the Intel Deliverables, the court would effectively be ignoring the specific limitations of the express patent license in section 5.4, which limits its scope to patents "related to the Product and based, in whole or part, on the IEEE 802.3 BaseT specification." P 5.4. The only consistent reading of the provisions of the Agreement is to give full effect to the language of 5.4 as to the scope of the patent license that is conveyed within.

Reading section 5.4 as the section that defines the scope of the patent license that is granted in the Joint Development Agreement is consistent with both the parties stated intent in the recitals section, **[**32]** the clear language of the agreement, and the extrinsic evidence that has been submitted by the parties. Broadcom argues that while the agreement was structured to jointly develop one particular semiconductor product ("the Product"), the agreement further provided for and licensed, the ability of both Intel and Broadcom to sell derivatives developed by Broadcom from the technology that Intel provided to it. The patent grant of section 5.4 is not inconsistent with this reading. Section 5.4 *does* grant a broad patent cross-license to the parties. That license includes any patents owned as of the effective date of the contract or any patents which may later issue, "which [are] related to the Product and based, in whole or part, on the IEEE 802.3 100 BaseT specification." While the patent license of the Joint Development Agreement is limited to this related set of patents, this provision is not inconsistent with the parties intent to enter into a cross-license that allows Broadcom to make the specific chip and derivatives **[*215]** thereof which relate to the 802.3 BaseT specification.

Broadcom argues that if the court were to interpret section 5.4 as the governing patent license in the agreement, **[**33]** section 5.4 would be inconsistent with various warranty and indemnification provisions within the agreement. See, e.g., PP Exhibit A 4.3, 13.1, 17.2.1, 17.2.3.1. The court sets forth these provision below.

In Exhibit A Section 4.3, Intel warrants that it:

> has all right, title and ownership to the Intel Technology and Intel Deliverables including any patents, copyrights, mask works, trade secrets, trademarks, and other intellectual property rights pertaining to the Intel Technology and Intel Deliverables including, without limitation, the right to grant the license herein to Broadcom and . . . it will take no action which would in any way impair the foregoing.

In Section 13.1, entitled "Exceptions to Intel Releases," of the Second Amendment to the

Joint Development Agreement, Intel warranted that "it has no claim or knowledge of facts that could give rise to a claim, against Broadcom under any such agreements or relationships." Section 17.2.3.1, entitled "Obligation to Assist," states that "Intel shall use commercially reasonable efforts to attempt to procure for Broadcom . . . the right to continue using the Intel Technology and Intel Deliverables" In section **[**34]** 17.2.1, entitled "Indemnification," Intel warrants that it will "indemnify Broadcom based on a claim that the Intel Technology or Intel Deliverables, respectively, alone and not in combination with any other products, infringe any patent, copyright, trade secret, or other intellectual property right of a third party."

The court disagrees that a construction finding that section 5.4 is the controlling section of the grant of patent rights in the agreement is inconsistent with the foregoing provisions. Broadcom's argument presupposes that the purpose of the agreement was to provide Broadcom with a broad license to all of Intel's patents that relate to any Broadcom developed derivative of the Intel Deliverables. Nothing in the interpretation that 5.4 is the controlling provision of the patent license is inconsistent with these provisions. Given that the agreement contemplated the parties using each others technology to develop a chip product, the warranty of section 4.3 sought to assure Broadcom that as of the effective date of the agreement, Intel actually owned rights to the technology and deliverables. Intel's grant to Broadcom of the specific patents encompassed by section 5.4 is **[**35]** not inconsistent with this warranty that Intel "has all right, title and ownership to the Intel Technology and Intel Deliverables."

Broadcom also argues that if 5.4 is read to be the controlling patent license it is inconsistent with sections 17.2.3.1 and 17.2.1. This argument fails for the same reason. The Broadcom rights that the indemnification and warranty provision are intended to cover are defined in section 5.4. These sections are intended to warrant that those rights, *as defined by the patent grant of section 5.4*, will not be impaired in any way.

For the reasons set forth in the preceding analysis, the court finds that it is clear from the Joint Development Agreement, that section 5.4 alone defines the scope of the patent license grant between the parties therein. This interpretation of the contract is the only interpretation that is consistent with the other terms of the contract and that gives effect to all sections of the contract. **[*216]**

c. Does the Section 5.4 Grant Broadcom a License Under the '830 and '410 Patents?

Having determined, as a matter of law, that section 5.4 is the controlling patent license provision in the Joint Development Agreement, the court must **[**36]** next determine whether section 5.4 grants to Broadcom a License under either the 830 and 410 patents. Section 5.4, in relevant portion, grants a license to Broadcom for:

> any patent which, as of the Effective Date, [Intel] owns or under which [Intel] has the right to grant licenses of the scope of the licenses granted in this Agreement, or any patent which may later issue which is related to the Product and based, in whole or part, on the IEEE 802.3 100 BaseT specification

The scope of the license conferred in section 5.4 (i.e. which patents are included in the license) is limited by the two requirements stated within that section. Those patents that do not meet both requirements are not included within the license. First, the patent must be owned by Intel as of January 22, 1995 or must be issued after January 22, 1995. Second, the patent must be "related to the Product and based, in whole or part, on the IEEE 802.3 BaseT specification."

Intel submits that because the 410 and 830 patents each fail to meet one of these two requirements, they are not licensed to Broadcom under the Joint Development Agreement. As set forth in more detail above in the section outlining **[**37]** the parties' arguments, Intel contends that the 830 patent is not included in the section 5.4 patent license because it was neither owned by Intel as of January 22, 1995, nor issued after January 22, 1995. Rather, the 830 patent issued on December 4, 1990, to Dayna Communications, a company that was later acquired by Intel on October 10, 1997. The 830 patent was subsequently transferred to Intel on December 28, 1998.

Broadcom does not dispute that section 5.4, as originally executed, did not include any license to the 830 patent because Intel did not own the 830 patent on the Effective Date. Rather, Broadcom argues that because the Joint Development Agreement was amended on December 17, 1997, after Intel's acquisition of Dayna Communications, and that amendment modified the agreement, "incorporating by reference the terms, conditions, and covenants set forth in the Agreement," December 17, 1997, the date of the execution of the amendment, replaces January 22, 1995 as the Effective Date of the agreement. Broadcom contends that because the 830 patent was owned by Intel prior to this new effective date, the 830 patent is included in the set of patents that is licensed under section **[**38]** 5.4. The parties do not appear to dispute that the 830 patent relates to the IEEE 802.3 BaseT specification and thus satisfies the second requirement of the patent license.

The court finds that Broadcom's argument that section 5.4 was republished with a new effective date of December 17, 1997 is contrary to the plain language of the amendment. Section 1 of the December 17, 1997 amendment states that original terms of the Joint Development Agreement, such as Effective Date, are incorporated by reference and retain "the respective meanings as set forth and assigned in the [Joint Development] Agreement." This means that the term Effective Date retained its meaning of January 22, 1995. While the amendment introduced the term "Amendment Effective Date," it did not amend the language of section 5.4. Because after the amendment, section 5.4 continues to use the term "Effective Date" and not the new term "Amendment Effective **[*217]** Date," the scope of section 5.4 remains limited to patents owned by Intel as of January 22, 1995.

Moreover, even if Broadcom's interpretation of the amendment were correct, the 830 patent would still not be included in the scope of section 5.4 because Intel did not **[**39]** own the 830 patent as of the Amendment Effective Date. It is undisputed that although Intel and Dayna merged on October 10, 1997, pursuant to section 1.1(d) of the Plan of Merger, that after the merger Dayna Communications would continue as a wholly owned subsidiary of Intel. Therefore, Dayna Communications -- not Intel--owned the 830 patent as of the Amendment Effective Date. Intel did not acquire the rights to the 830 patent until December 28, 1999, when Dayna Communications was dissolved and its assets were transferred to Intel. Section 5.4 does not extend the scope of the license to patents owned by Intel subsidiaries; it refers only to patents owned by or issued to Intel itself. While Broadcom again argues that this interpretation is contrary to Intel's section 4.3 warranty that it would take no action which would in any way impair its grant of license to Broadcom, this warranty in no way precludes suing Broadcom for infringement for a patent, such as the 830 patent, that is not covered by Intel's license grant to Broadcom. While Broadcom argues that the circumstances by which Intel acquired the 830 patent wrongly takes advantage of an unintended loophole in the agreement, **[**40]** the clear language of section 5.4, which the court may not ignore, excludes the 830 patent from the license grant.

The court now turns to the 410 patent. It is undisputed that the 410 patent, which relates to a "ball grid array" semiconductor package that carries an integrated circuit, is not related to the 100 Mbps chip that is the defined "Product" of the Joint Development Agreement. It is also undisputed that the 410 patent is not based on the IEEE 802.3 100

BaseT specification, which, as described above, relates to Ethernet networks. The 410 patent is therefore not included in the patent license in section 5.4, which includes only patents that are related "to the Product and based, in whole or part, on the IEEE 802.3 100 BaseT specification."

Broadcom argues that pursuant to section 5.2, to the extent Broadcom packages its products that are Broadcom Developments of Intel Deliverables, it has the right to "make, use, sell [and] market . . ." those products "solely as an integral part of or incorporated to end users directly or indirectly through Broadcom's distribution channel." Because the court has determined that section 5.4, and not section 5.2, governs the scope of **[**41]** Broadcom's patent license, the court finds Broadcom's reliance on section 5.2 as the source of broad patent rights to be unavailing. Even if the court were to construe section 5.2 as granting a broader patent license than section 5.4 that extends to any product derived from the Intel Deliverables, the above language of section 5.2 would not give Broadcom the right to use infringing packaging technology, such as that embodied in the 410 patent, that was not among the Intel Deliverables.

Intel has met its burden of demonstrating that Broadcom's allegedly infringing products are not licensed under the 830 and 410 patents. Because the court concludes that the 830 and 410 patents are excluded from the license grant of the Joint Development Agreement, the court will grant partial summary judgment in favor of Intel on this issue. **[*218]**

C. Should the Court Grant Either Parties' Motions for Summary Judgment Regarding Whether Broadcom's Accused Products Sold to General Instrument Are Licensed Under the Motorola Agreement?

1. The Motorola Agreement

On June 9, 1997, Motorola, Inc. and Intel Corporation entered into a "License and Cooperation Agreement" ("the Motorola Agreement") in **[**42]** which they granted to each other "a non-exclusive, non-transferable license throughout the world" to certain defined licensed products, "to make, use, sell, import, offer for sale and otherwise dispose of LICENSED PRODUCTS, and to have made LICENSED PRODUCTS by another manufacturer for supply to MOTOROLA for use, import, offer for sale, sale or other disposition by MOTOROLA" PP 3.1, 3.2, 3.3. The term LICENSED PRODUCT is defined in section 1.5 to include one or more of the following defined terms: SEMICONDUCTOR MATERIAL, SEMICONDUCTOR STRUCTURE, SEMICONDUCTOR DIE, SEMICONDUCTOR PACKAGE, SEMICONDUCTOR DEVICE, and SEMICONDUCTOR CIRCUIT. Moreover, in the agreement, the term "LICENSED PRODUCT, when used alone, means LICENSED PRODUCT of MOTOROLA or LICENSED PRODUCT of INTEL as the case may be."

The specific license provision at issue is section 3.3, which is reproduced in full in the following paragraphs:

> 3.3 INTEL hereby grants to MOTOROLA for the lives of the INTEL PATENTS a non-exclusive, non-transferable license throughout the world under the INTEL PATENTS, without the right to sub-license, for MOTOROLA SEMICONDUCTOR PRODUCT SECTOR:
>
> 3.3.1 to make, use, sell, import, **[**43]** offer for sale and otherwise dispose of LICENSED PRODUCTS, and
>
> 3.3.2 to have made LICENSED PRODUCTS by another manufacturer for supply to MOTOROLA for use, import, offer for sale, sale of other disposition by MOTOROLA, and

> 3.3.3 to make, use and have made MANUFACTURING APPARATUS and to practice any process or method involved in the use thereof in furtherance of the license grants of Section 3.3.1 and 3.3.2.

The term "INTEL PATENTS" is defined in section 1.2 to mean:

> all classes or type of patents and utility models, other than design patents, and applications for the aforementioned of all countries of the world, which are issued, published or filed or entitled to a priority filing date prior to the date of expiration or termination of this Agreement, which are owned by or licensed to INTEL and under which . . . INTEL may have, as of the EFFECTIVE DATE of this Agreement, or may thereafter during the term of this Agreement acquire

The EFFECTIVE DATE of the Motorola Agreement is June 9, 1997. The duration of the agreement is 10 years.

The term "MOTOROLA SEMICONDUCTOR PRODUCT SECTOR" is defined in section 1.12 to mean:

> a MOTOROLA existing **[**44]** business unit manufacturing and developing products falling within the definition of LICENSED PRODUCTS (as hereinafter defined), now consisting of [a set of named semiconductor groups and divisions within Motorola]. This definition of the MOTOROLA SEMICONDUCTOR **[*219]** PRODUCTS SECTOR also includes the predecessor MOTOROLA business unit of said Groups and/or said Divisions taken singularly or in combination and any MOTOROLA future business unit acquired or derived from, by separation or merger, irrespective or appellation, said Groups and/or said Divisions taken singularly or in combination.

Under section 3.12,

> MOTOROLA shall have the right to extend the release and grants of Sections 2 and 3, respectively, to any MOTOROLA SUBSIDIARY if such SUBSIDIARY assumes the same obligations as MOTOROLA hereunder (other than Section 4) as if such entity was named in place of MOTOROLA.

2. The Parties' Positions

The parties have both moved for summary judgment on this license defense. Intel has moved for summary judgment that Broadcom's products accused of infringing the asserted claims of Intel's 478, 201, and 630 patents are not licensed under the Motorola Agreement. Broadcom **[**45]** has cross-moved for summary judgment of noninfringement of those same patents for those accused products sold by Broadcom to General Instrument Corporation ("GI") n1, a Motorola subsidiary, based on the patent license in the Motorola Agreement. Broadcom states that sales of the following products ("the Video Chips") from Broadcom to GI are licensed pursuant to the "have made" provisions of the Motorola Agreement: BCM3033, BCM3036, BCM3037, BCM3115, BCM3116, BCM3120, BCM3137, BCM3250, BCM3300, BCM3350, BCM3900, BCM4100, BCM4210, BCM7010, BCM7015, BCM7020, BCM7030, and BCM7031.

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n1 General Instrument Corporation was formerly known as "NextLevel Systems, Inc." On January 30, 1998, NextLevel Systems, Inc. changed its name to General Instrument Corporation. For the sake of clarity, this opinion consistently will refer to both General Instrument Corporation and NextLevel Systems, Inc. by the shorthand abbreviation, GI.

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a. Intel's Position

Intel attacks Broadcom's license defense under the Motorola Agreement on **[**46]** two grounds. Intel first contends that sales by Broadcom to GI cannot be licensed under the Motorola Agreement, because section 3.3 of the agreement expressly limits Motorola's rights to the Motorola Semiconductor Product Section, which is defined in section 1.12 as being limited to existing Motorola business units as of June 9, 1997. GI is not within the scope of section 3.3 because it was not an existing business unit at the time the license became effective in 1997; GI became a new sector of Motorola when it was acquired on January 5, 2000. Second, Intel argues that while Broadcom premises its Motorola license defense on "have made" rights, Motorola's "have made" rights do not extend to the purchase of chips not designed by Motorola.

b. Broadcom's Position

Addressing each of Intel's bases for summary judgment in turn, Broadcom first argues that the Motorola Agreement is not restricted to then-existing business units, because section 3.12 of the agreement extends Motorola's rights under the license to all Motorola subsidiaries, including those acquired after the execution of the Motorola Agreement. Effectively, Broadcom argues that section 3.12 means that the patent license **[**47]** granted by Intel extends to Motorola and its subsidiaries, and is not limited to then-existing business units of Motorola. Broadcom reasons that the Motorola Agreement extends the license **[*220]** terms to GI, because GI is a wholly owned subsidiary of Motorola.

With respect to the scope of the "have made" right that is granted within the Motorola Agreement, Broadcom argues that any sales to GI are licensed because Intel expressly granted to Motorola and its subsidiaries the right to "have made" by another manufacturer semiconductor material and semiconductor circuits for use, sale, or other disposition by Motorola and its subsidiaries without violating any patent issued to, or acquired by, Intel during the term of the Motorola Agreement. Thus, according to Broadcom, because GI is merely exercising its "have made" rights by purchasing the Video Chip products from Broadcom, Broadcom's manufacture and sale of Video Chips for GI cannot infringe Intel's patents.

3. The Court's Decision

In order to satisfy its burden on summary judgment, Broadcom must prove that there is no genuine issue of material fact and that it is entitled to judgment as a matter of law as to both of the following legal **[**48]** issues: (1) whether GI is covered by the Motorola Agreement, and (2) whether the "have made" rights granted by Intel in the Motorola Agreement authorize Broadcom's manufacture and sale of Video Chips for GI. Broadcom must therefore prove that GI is covered by the Motorola Agreement and that the "have made" rights granted by Intel authorize Broadcom's Video Chip sales to GI. If Broadcom fails to prove that both of these legal issues must be answered in its favor as a matter of law, the court must deny its summary judgment motion.

In contrast, because Intel is seeking summary judgment that Broadcom's license defense under the Motorola Agreement fails as a matter of law, it may succeed either by proving

that GI is not covered by the Motorola Agreement or by proving that even if GI is covered, the "have made" rights granted by Intel to GI do not authorize Broadcom's Video Chip sales to GI. Intel may thus succeed in its summary judgment motion by proving that one of the two legal issues listed above must be resolved in its favor as a matter of law.

a. Has either party proven that no genuine issue of material fact exists as to whether GI is licensed under the Motorola Agreement? **[**49]**

As section 8.2 of the Motorola Agreement expressly provides that the agreement is governed by, and to be construed under the laws of the State of Delaware, the court applies Delaware law in interpreting the agreement. Under Delaware law, the interpretation of a patent license agreement is a question of law. Klair, 531 A.2d at 222.

The principles of contract interpretation are well settled. Contracts must be construed as a whole, to give effect to the intentions of the parties. E.I. duPont de Nemours and Co. v. Shell Oil Co., 498 A.2d 1108, 1113 (Del. 1985). Where the contract language is clear and unambiguous, the parties intent is ascertained by giving the language of the contract its ordinary meaning. Rhone-Poulenc Basic Chem. Co. v. American Motorists Ins. Co., 616 A.2d 1192, 1195 (Del. 1992). "In upholding the intentions of the parties, a court must construe the agreement as a whole, giving effect to all provisions therein. Moreover, the meaning which arises from a particular portion of an agreement cannot control the meaning of the entire agreement where such inference runs counter to the agreement's overall scheme or plan. **[**50]** " E.I. duPont, 498 A.2d at 1113. The court will consider extrinsic evidence to interpret the agreement **[*221]** only if there it finds that is ambiguity in the contract. Pellaton v. Bank of New York, 592 A.2d 473, 478 (Del. 1991).

Intel argues that interpreting the agreement as extending Motorola's rights to its subsidiaries, reads out the explicit limitation of the grant in section 3.3 to the MOTOROLA SEMICONDUCTOR PRODUCT SECTOR, which is limited to an enumerated set of then-existing business unit by that terms definition in section 1.12. Broadcom, however, argues that interpreting the agreement as not being extended to Motorola's subsidiaries, reads out the explicit right of section 3.12 that gives Motorola the right to extend the license grants to any MOTOROLA SUBSIDIARY, which is defined by section 1.21 to include after-acquired wholly owned subsidiaries such as GI.

The court declines to accept either of these assertions. Rather, having considered the parties' arguments and read the Motorola Agreement, the court finds that the agreement is unambiguous. There is no reason to adopt a construction that "reads out" the rights expressly granted in either section **[**51]** 3.3 or section 3.12. Rather, the court must interpret the agreement in a manner that gives effect to all of its provisions. The two sections can and therefore must be read consistently and in consideration of the overall purpose of the cross-license agreement.

In Section 3.7, Motorola grants to Intel "a non-exclusive, non-transferable license throughout the world under MOTOROLA SEMICONDUCTOR PRODUCTS SECTOR PATENTS. . . ." This term is defined, in section 1.13, as the subset of patents owned by Motorola that "arise out of inventions made by one or more employees of the MOTOROLA SEMICONDUCTOR PRODUCTS SECTOR; or which are acquired by MOTOROLA and become part of the MOTOROLA SEMICONDUCTOR PRODUCTS SECTOR patent portfolio" before or during the duration of the Motorola Agreement. Thus, Motorola did not grant to Intel rights to all of its patents in section 3.7, but limited the license to the subset of patents relating to the MOTOROLA SEMICONDUCTOR PRODUCTS SECTOR.

Throughout the Motorola Agreement, each of the license grants between Intel and Motorola are mutual. The mirror image license section that grants rights from Intel to Motorola is section 3.3. Given that Motorola's patent license **[**52]** grant was limited to patents in the MOTOROLA SEMICONDUCTOR PRODUCTS SECTOR, it is not surprising that

the license Intel granted to Motorola in consideration of Motorola's grant in section 3.7 was also limited to the MOTOROLA SEMICONDUCTOR PRODUCTS SECTOR.

The plain language of section 3.12 demonstrates that parties' intent to allow Motorola some flexibility regarding its ability to extend the "releases and grants of Sections 2 and 3," the Mutual Releases and Grants sections, to its subsidiaries. Intel is given the same flexibility in section 3.13, the mirror-image section of 3.12, which states that "INTEL shall have the right to extend the release and grants of Sections 2 and 3, respectively, to any INTEL SUBSIDIARY if such SUBSIDIARY assumes the same obligations as INTEL hereunder . . . as if such entity was named in the place of INTEL."

According to its plain language, Section 3.12 does not, as Broadcom argues, *automatically* extend the grants of section 3 to all Motorola subsidiaries. It is therefore incorrect that section 3.12 mandates replacing all occurrences of the name "Motorola" in the agreement with the name of its after-acquired subsidiary, "GI." Section 3.12 gives **[**53]** Motorola "the right to extend" **[*222]** the Intel patent licenses to its subsidiary. Motorola must affirmatively exercise this right. Moreover, the Intel patent license grants may only be extended to a subsidiary "if such SUBSIDIARY assumes the same obligations as MOTOROLA hereunder . . . as if such entity were named in place of MOTOROLA." Thus, under 3.12, in order for a subsidiary to obtain rights under the Motorola Agreement, that subsidiary must agree to assume the same obligations as Motorola under the Motorola Agreement. This means the license that Intel granted to Motorola with respect to its patents may only be extended to GI if GI agrees to extend to Intel a mutual license to GI's patents.

In sum, the Motorola Agreement, in sections 3.12 and 3.13, gives both parties the right to extend each other's license grants to each parties' subsidiaries. This extension is not automatic, nor is it unconditional. The contemplated quid pro quo for extending Intel's license to a Motorola subsidiary is that the subsidiary must license back its own patents to the Intel.

Instead of setting forth the necessary facts that demonstrate that GI is licensed under the terms of the Motorola Agreement, Broadcom **[**54]** argues in its briefs that "Section 3.12 of the Agreement extends Motorola's rights under the Agreement to any 'MOTOROLA SUBSIDIARY,' including those acquired after the execution of the Agreement . . . General Instrument is a Motorola subsidiary . . . As such, pursuant to Section 3.12, General Instrument is entitled to the rights conveyed by Intel to Motorola pursuant to the Agreement" This theory is not correct as a matter of law. GI acquires no rights under section 3.12 of the Motorola Agreement simply because it is a Motorola subsidiary.

Broadcom has not provided any documents or declarations that support the propositions that Motorola affirmatively exercised its "right to extend" its license of the Intel patents to GI, or that GI has agreed to extend to Intel a license of its own patents on the same terms as and "as if it were named in place of MOTOROLA" in the Motorola Agreement. Factual support for both of these propositions is required, if the court is to find that GI is covered by the Motorola Agreement. By simply pointing to section 3.12, Broadcom has identified a conditional right that Motorola holds. However, because Broadcom has not shown that Motorola and GI exercised **[**55]** their rights in accordance with section 3.12, the limitations of section 3.3 exclude GI from the license grants within the Motorola Agreement. Without such a showing, the court finds that GI was not licensed under the Motorola Agreement. Therefore, the court finds that Broadcom has failed to meet its burden of proving that it is entitled to judgment as a matter of law that its sales to GI do not infringe Intel's 478, 201, and 630 patents because such sales were covered by the Motorola Agreement. Accordingly, the court will deny Broadcom's motion.

✦Intel may satisfy its burden on summary judgment by demonstrating that there is an absence of evidence to support the case of the nonmoving party. Celotex Corp. v. Catrett,

477 U.S. 317, 325, 91 L. Ed. 2d 265, 106 S. Ct. 2548 (1986). Intel has met this burden by demonstrating Broadcom's failure to come forward with factual support that shows that GI is covered by the Motorola Agreement. Instead of coming forward with facts that demonstrate that Motorola exercised its 3.12 right in accordance with its terms, Broadcom simply argues that because GI is a Motorola subsidiary, it is covered by section 3.12. According to the **[**56]** court's interpretation of the Motorola Agreement, that proposition is incorrect. The court will therefore grant summary judgment for Intel **[*223]** that Broadcom's sales to GI are not licensed under the Motorola Agreement. Because the court finds that GI is not entitled to the rights conveyed by Intel to Motorola in the Motorola Agreement, the court need not reach Intel's second independent ground for summary judgment regarding the scope of the "have made" rights granted by Intel to Motorola and whether those rights confer protections upon Broadcom.

D. Should the Court Grant Either Parties' Motions for Summary Judgment Regarding Whether Broadcom's Accused Products Sold to Intel Licensees Are Licensed Under Intel License Agreements with Those Licensees?

In order to buy peace in the semiconductor industry, Intel has entered into patent cross-license agreements with a number of companies. Broadcom has moved for summary judgment on the theory that "have made" rights conferred by Intel to Intel licensees in those license agreements shield Broadcom from infringement for sales made to those licensees.

1. The Intel License Agreements

In Intel's opening brief in support of its summary judgment **[**57]** motion Intel directs it arguments to a number of license agreements under which Broadcom had asserted affirmative license defenses. The agreements addressed in Intel's brief are: (i) the Intel/Sony License Agreement (1/1/93); (ii) the Intel/Sony License Agreement -- 3 Year Term relating to memory technology (4/9/90) ("the Intel/Sony Memory Agreement"); (iii) the Intel/NEC Patent Cross License Agreement (7/9/92); (iv) the Intel/Samsung Patent Cross License Agreement (2/8/93); (v) the Intel/Siemens Agreement (2/2/76); (vi) the Intel/Siemens Cooperation Agreement (2/2/76); (vii) the Intel/Compaq Patent Cross License Agreement (1/10/96); (viii) the Intel/Compaq Extended Industrial Standard Architecture Patent License Agreement (4/26/01) ("the Intel/Compaq EISA Agreement"); and, (ix) the Intel/Compaq PCI Agreement (2/26/93).

In Broadcom's answering brief, Broadcom clarified its position on certain of the licenses addressed by Intel. Broadcom stated that its opposition and cross-motion with regard to Broadcom sales to Sony are based on the Intel/Sony License Agreement and not on the Intel/Sony Memory Agreement. Broadcom Answering Br. at 2 n.1. Broadcom also stated that its opposition and **[**58]** cross-motion with regard to Broadcom sales to Compaq are based on the Intel/Compaq Patent Cross License Agreement and are not based on the Intel/Compaq EISA Agreement or the Intel/Compaq PCI Agreement. Id. at 2 n.2. Finally, Broadcom stated that it does not contend that Intel granted "have made" rights to Siemens pursuant to either of the Intel/Siemens Agreements discussed in Intel's opening brief. Id. at 2 n.3. Based on these concessions and because four of the above mentioned license agreements do not confer "have made" rights to the Intel licensees and the fifth (the Intel/Sony Memory Agreement) does not license the technology covered by the five patents at issue in this lawsuit, the court will grant summary judgment in favor of Intel that the Broadcom's sales to Intel licensees are not licensed under the Intel/Sony Memory Agreement, the Intel/Compaq EISA Agreement, the Intel/Compaq PCI Agreement, the Intel/Siemens Agreement, or the Intel/Siemens Cooperation Agreement.

In addition to clarifying its affirmative defenses as to the patent licenses raised in Intel's motion, Broadcom cross-moved for summary judgment on Intel's claim for patent infringement asserting that, as **[**59]** a **[*224]** matter of law, Broadcom's

manufacture and sale of certain products to Sony, NEC, Samsung, Compaq, and in addition, AT&T, Digital, Hayes, HP, Hitachi, Hyundai, Mitsubishi, and Phillips (collectively the "Licensed Customers") constitute a valid exercise of the Licensed Customers' "have made" rights, as authorized by their respective license agreements with Intel. Broadcom contends that the sale of any products that fit within each of the License Agreements' definition of "Licensed Product" is thus licensed and noninfringing.

For clarity, the court will list the twelve license agreements that remain at issue and highlight the key terms of the license agreements at issue in the table that follows:

Licensee	**Title of License Agreement**	**License Grant Language**
AT&T	Patent License Agreement between AT&T and Intel (1/1/90)	"Intel grants to AT&T . . . nonexclusive, royalty-free and non-transferable licenses for (i) INFORMATION. HANDLING SYSTEMS . . . The licenses granted herein are licenses to (i) make, have made, use, lease, sell and import LICENSED PRODUCTS."
Compaq	Patent Cross-license Agreement (1/10/96)	"Intel . . . grants to Compaq . . . a worldwide, nonexclusive, royalty-free nontransferable license. . . to make, have made for Compaq, use, lease, sell, import, have developed for Compaq and to otherwise transfer or dispose of the Compaq Licensed Products."
Digital	Patent Cross License Agreement (5/16/97)	"Intel hereby grants to Digital . . . a non-exclusive, non-transferable, royalty-free, worldwide license, without the right to sublicense, under the Intel Patents to . . . have made Digital Licensed Products."

Hayes	Systems Patent License Agreement (1/1/94)	"Intel . . . hereby grant[s] to Hayes . . . a nonexclusive, worldwide, irrevocable, perpetual, royalty-free license under all of Intel's patents for the entire term thereof, to make, manufacture, use or sell Hayes Licensed Products, to have Hayes Licensed Products made for Hayes' use or sale . . ."
Hewlett Packard	Cross-License Agreement (1/10/83)	"Intel hereby grants HP an irrevocable, retroactive, nonexclusive, world-wide, royalty-free license under all patents and patent applications owned and controlled by INTEL having a first effective filing date prior to January 1, 2001."
Hitachi	Patent Cross License Agreement (3/10/92)	"Intel hereby grants and agrees to grant to Hitachi non-exclusive, non-transferable, royalty-free, worldwide licenses without the right to sublicense under Intel Patents to make, to have made, to use, and to sell . . . Hitachi Licensed Products." "'A license to have made shall mean a license permitting the licensee to use a third party . . . to make, in whole, or in part, a Licensed Product . . . but such license has effect only if design and manufacturing specifications to manufacture the Licensed Product . . . are provided by the licensee."

Hyundai	Patent Cross License Agreement (4/25/96)	"Intel . . . hereby grants to Hyundai a non-exclusive, non-transferable, worldwide license, without the right to sublicense, under the Intel Patents to . . . make, have made, use Hyundai Licensed Products."
Mitsubishi	Agreement (10/16/79)	"INTEL grants and agrees to grant MITSUBISHI non-exclusive, non-transferable, royalty-free, world-wide licenses under INTEL PATENTS and INTEL PATENT APPLICATIONS to make, to have made, to use, to sell (either directly or indirectly), to lease and to otherwise dispose of LICENSED PRODUCTS."
NEC	Patent Cross License Agreement with NEC (7/29/92)	"INTEL hereby grants to NEC non-exclusive, non-transferable, royalty-free worldwide licenses under INTEL patents, without the right to sub-license, to make, to have made, to use, to import, to sell (either directly or indirectly), to lease and otherwise dispose of NEC Licensed Products"
Phillips	Agreement (7/15/90)	"INTEL hereby grants and agrees to PHILLIPS . . . a non-exclusive, indivisible, royalty-free license under INTEL Patents . . . to make, to have made, to use, to lease and to sell or otherwise dispose of Semiconductor Devices"

Samsung	Patent Cross License Agreement (2/8/93)	"INTEL hereby grants to SAMSUNG non-exclusive, non-transferable, worldwide licenses under INTEL Patents to make, to have made, to use, to sell (either directly or indirectly) to have developed exclusively for SAMSUNG, to lease and to otherwise dispose of SAMSUNG LICENSED PRODUCTS"
Sony	License Agreement (4/28/94)	"Intel hereby grants to Sony non-exclusive, non-transferable, worldwide licenses, without right to sublicense, under Intel Patents to make, to have made, to use, to sell (directly or indirectly), to have developed exclusively for Sony to please and otherwise dispose of Sony Licensed Products."

[60] [*225]**

Licensee	**Intel Patents Included in License Grant**	**Term of License**
AT&T	All patents, excluding design patents, owned or acquired prior to 1/1/94.	Terminated on 12/31/98
Compaq	All patents with effective filing date prior to 12/31/05 except design and semiconductor manufacturing process patents	Life of patents

Digital	All patents having first effective filing date before 5/16/08.	Life of patents.
Hayes	All Intel patents issued or acquired as of 1/1/99	Life of patents.
Hewlett Packard	All patents having a first effective filing date prior to 1/1/00	Life of Patents
Hitachi	All patents pertaining to semiconductor materials, semiconductor devices, integrated circuits, or integrated circuit modules and that have a first effective filing date prior to 12/31/99	Life of Patents
Hyundai	All patents having a first effective filing date prior to 12/31/02	Life of patents.
Mitsubishi	All patents having a first effective filing date prior to 10/16/89.	Life of patents.
NEC	All patents having a first effective filing date prior to 5/31/02.	Life of patents.
Phillips	All patents having a first effective filing date prior to 7/15/00.	Life of patents.
Samsung	All patents having a first effective filing date prior to 12/31/02.	Life of patents.
Sony	All patents having a first effective filing date prior to 12/31/02.	Life of patents.

[61] [*226]**

Before turning to the parties' positions and the court's decision on the issue of the scope of the "have made" rights in the licenses, the court will first address some areas of disagreement with respect to which patents are covered by certain of the licenses at issue.

Both parties agree that the Intel/AT&T Patent License Agreement was terminated on December 31, 1998. Therefore, this license agreement cannot cover sales to AT&T made after that date. Regardless of the scope of the "have made" rights within, any sales to AT&T made by Broadcom on or after January 1, 1999 cannot be licensed. Intel additionally argues that the Intel/AT&T license does not cover the 830 and 410 patents because the license is limited to inventions owned or controlled during the period January 1, 1990 through January 1, 1994. This is stated in the Definitions Appendix of that agreement, which defines "Corporation's Patents" as "all patents . . . owned or controlled at any time during the LIMITED PERIOD by the CORPORATION." The term "LIMITED PERIOD" means "the period commencing on the effective date of this agreement and having a duration of four years." The court finds that Intel is correct. The 410 patent **[**62]** was filed on October 24, 1997, well after January 1, 1994. Therefore, the 410 patent is not one of the patents licensed under the Intel/AT&T Patent License Agreement. Similarly, as discussed above in section I.B.2.a., the 830 patent was not acquired by Intel until December 28, 1998. Therefore, the 830 patent is not one of the patents licensed under the Intel/AT&T Patent License Agreement. For the same reasons, the 410 and 830 patents are also not licensed under the Intel/Mitsubishi Agreement, which only includes patents with an effective filing date prior to October 16, 1989. **[*227]**

The court now turns to the parties' respective positions on the scope of "have made" rights.

2. The Parties' Positions

a. Intel's Position

Intel contends that each of the license grants at issue expressly excludes a third party, such as Broadcom, from manufacturing or selling products not designed by the Intel licensee. Intel argues that each of the license agreements have one or both of the following similar limitations. First, "have made" rights cover only Licensee-designed products manufactured by a third party. Therefore Broadcom is only covered by the license if it was acting as a "foundry" **[**63]** (i.e. it was manufacturing products from designs provided by the Licensee, and not designing the products itself). See Cyrix Corp. v. Intel Corp., 803 F. Supp. 1200, 1204 (E.D. Tex. 1992) ("Cyrix I"). Foundry work, or custom manufacturing, refers to arrangements in which a semiconductor company (the foundry) makes and sells semiconductor products to its customers, the designs for which were developed or owned by the customers. See generally, Leonard J. Hope, The Licensed-Foundry Defense In Patent Infringement Cases: Time to Take Some of the Steam Out of Patent Exhaustion?, 11 Ga. St. U. L. Rev. 621, 628 (1995) ("Hope: Licensed Foundry Defense") (discussing how and why semiconductor companies typically out-source the manufacture of chips to foundries).

Similarly, Intel argues that its licenses are limited to "[Licensee] Products" and that each of the licenses are limited in this manner to only cover products designed by the Licensee. Under this interpretation, Intel licensees' do not have the authority to have *Broadcom* products made; they only have the authority to have *Licensee* products made. Thus Intel concludes that because Broadcom **[**64]** and not the licensee designed the products sold to the licensees, the Broadcom products are not licensed. See Intel v. U.S. Intern. Trade Comm'n, 949 F.2d 821, 828 (Fed. Cir. 1991) ("Intel Corp. v. ITC").

b. Broadcom's Position

In response, Broadcom first contends that nothing inherent in "have made" rights requires the licensee to provide the unlicensed third party with designs. Rather, unrestricted "have made" rights provide a licensee with a right to request any third-party to manufacture a licensed good. Cyrix Corp. v. Intel Corp., 77 F.3d 1381, 1386 (Fed. Cir. 1996) ("Cyrix II" n2). Therefore, Broadcom argues, it follows that any manufacture of a licensed good by a third-party for the licensed party cannot constitute an act of infringement by that third party. In support of its position, Broadcom points to other Intel licenses not at issue in this case that confer "have made" rights that are restricted by the further requirement that "designs, specification and working drawings for the manufacture thereof are furnished by, and originate with," the licensee. See, e.g., Intel/IBM Agreement (October 1, 1989); Intel/Bull Patent Cross **[**65]** License Agreement (July 6, 1998); Intel/S3 Patent Cross License Agreement (December 16, 1998). n3

- - - - - - - - - - - - - - - - - -Footnotes- - - - - - - - - - - - - - - - - -

n2 While there are a number of Cyrix cases that have been designated Cyrix I-IV in different articles and opinions, this opinion uses the designations Cyrix I and Cyrix II to refer, respectively, to the E.D. of Texas District Court opinion and the appeal of that decision to the Federal Circuit.

n3 Intel notes that the Intel-Hitachi Patent Cross License Agreement, that is at issue in this case, does, however, contain such a limitation on Hitachi's have made rights: "such license [to have made] has effect only if design and manufacturing specifications to manufacture the Licensed Product . . . are provided by the licensee." It is true, however, that none of the other "have made" rights at issue contain any such limitation.

- - - - - - - - - - - - - - - - - -End Footnotes- - - - - - - - - - - - - - - - - **[*228]**

Broadcom also argues that Intel's reliance on Intel Corp. v. ITC for the proposition that the phrase "[Licensee] Products" constitutes a limitation that precludes unlicensed **[**66]** third-party's from manufacturing the products for the licensee is misplaced, because in analyzing other license agreements, subsequent Federal Circuit cases have held that placing the licensee company's name before the word "Products" when referring to what is licensed, is not necessarily a substantive limitation but can simply be a modifying term. See Cyrix II, 77 F.3d at 1384-1386 (the term "IBM Licensed Products" in the IBM-Intel agreement did not limit the products it was licensed to sell to those designed by IBM); cf. Intel Corp. v. ULSI Sys. Tech., Inc., 995 F.2d 1566, 1570 (Fed. Cir. 1993) ("ULSI") (discussing Intel Corp. v. ITC: "In determining whether the licensing agreement provided for foundry rights, the court focused on what was meant by the "Sanyo limitation" in the agreement. The court concluded that the limitation precluded Sanyo from serving as a foundry for non-Sanyo EPROMs because Sanyo was only permitted to sell Sanyo products . . . In contrast, the licensing agreement between Intel and HP here contains no restriction on HP's right to sell or serve as a foundry.").

3. The Court's Decision

The patent law defines infringement **[**67]** as making, using, or selling any patented invention without authority of the patent owner. 35 U.S.C. § 271(a). A patent therefore confers upon its owner a bundle of rights relating to the patented invention including the rights to exclude others from making, using, or selling the subject of the patent. Patent license agreements allow third party licensees to have partial or complete access to the patented invention by providing immunity from an infringement suit on the licensed patent. A patent license is essentially a waiver of the patent owner's right to sue; the parties agree that the patent owner will allow the licensee either to make, to use, to sell

(or some combination of, or derivative of, these three rights) without subjecting the licensee to an infringement suit. It is thus well settled that a valid license is a complete defense to infringement. Unidisco, Inc. v. Schattner, 824 F.2d 965, 968 (Fed. Cir. 1987) (resale of a patented product is not infringing when it was purchased from a party licensed to sell the products); Lisle Corp. v. Edwards, 777 F.2d 693, 695 (Fed. Cir. 1985) (sale by authorized licensee to a third **[**68]** party bars a finding of infringement against the licensee and the third party)

A "have made" right, which is a right carved from the term "to make" in 35 U.S.C. § 271(a), provides a licensee with the right to request an unlicensed third-party to manufacture a licensed good for the licensee. See Cyrix II, 77 F.3d at 1386. The key issues in this dispute by the parties relate to the mechanics of how a "have made" right is exercised and the scope of its coverage. That is, (i) did the Intel licensees' exercise their "have made" rights by purchasing allegedly infringing products from Broadcom?, and if so (ii) does the fact that Broadcom sold allegedly infringing products to Intel licensees insulate Broadcom from liability for infringement based on those sales?

Because the parties seek to draw support from Federal Circuit cases involving some combination of license defenses, foundry rights, and "have made" rights, **[*229]** the court will begin by reviewing the facts and holdings of those cases.

a. Review of pertinent case law: license defenses

The intersection of cross-licenses and foundry agreements to create viable implied license defenses for unlicensed **[**69]** third parties have been the subject of a number of judicial opinions and of considerable scholarly debate in the past decade. See Cyrix II, 77 F.3d 1381 (addressing separate license defenses of Cyrix with respect to the Intel/IBM agreement and the Intel/Mostek agreement); Cyrix I, 803 F. Supp. 1200; ULSI, 995 F.2d 1566; Intel Corp. v. ITC, 946 F.2d 821; see also David K. Barr, Recent Federal Court Decisions on Interpretation of Agreements Relating to Patents, 477 PLI/Pat 1085, 1092-1099 (1997); Hope: Licensed Foundry Defense, 11 Ga. St. U. L. Rev. 621.

There are two well-understood factual circumstances where unlicensed parties can attain rights that shield their actions from infringement based on the third parties' interaction with a licensee. First, the unlicensed third party can give its designs to a licensee and ask that licensee to use its rights "to make" and "to sell" under its license to manufacture the product for the third party (i.e. to act as a foundry for the unlicensed third party), who then resells that product to its customers. The Federal Circuit has held that because the products **[**70]** were made and sold by a licensed party, the licensor/patent owner cannot sue the third party for infringement. See Cyrix II, 77 F.3d at 1387; ULSI, 995 F.2d at 1570. Second, a licensed party that has the right to "have [products] made," can exercise that right by requesting an unlicensed third party to make and sell products for it, which the licensee either uses or ultimately sells to its customers. See Cyrix II, 77 F.3d 1387-88. Under that arrangement, to the extent the unlicensed party makes products for the licensee, the licensor/patent owner cannot sue the unlicensed party for patent infringement.

(i) The Intel Foundry Cases

The foundry cases arise under similar sets of facts and relationships between the parties, which Judge Plager summarized in his dissenting opinion in ULSI, as follows:

> Company A and Company B are major competitors A and B both maintain large [research] & [development] operations, and obtain patents on their various inventions . . . Both companies . . . agree that it is in their mutual interest to avoid spending resources litigating with each other over

> patent rights rather than **[**71]** inventing [Therefore,] they cross-license each other in such a way that each is free to innovate and market their own similar products, without fear of infringing upon the patent rights of the other . . .
>
> Company C, a small company seeking to break in to the same market [as A and B], approaches Company B with a proposition. C will provide B with details of its (C's) invention (a design similar to that patented by A). C will provide complete . . . specifications, and warrants to B in writing that C rightfully obtained the design involved and that it does not infringe the patent rights of others. Using its manufacturing facilities, B is to manufacture the item to C's specifications. B will provide the raw materials, and will be paid on a per completed unit basis. B agrees, and . . . delivers the item to C . . .
>
> Later, C markets its product . . . A examines C's product, concludes that it is so much like A's product that it infringes one of A's patents, and sues C. C then defends on the grounds, that since B manufactured the item that infringes A's patent, and since B is immune from liability for infringement of A's patents **[*230]** under the A-B cross-license, C also is immune **[**72]** under the doctrine of . . . 'patent exhaustion.'

ULSI, 995 F.2d at 1571 (Plager, J. Dissent). Such was the scenario in Intel Corp. v. ITC, Cyrix I, Cyrix II, and ULSI.

In Intel Corp. v. ITC, Intel and Sanyo entered into a broad patent cross-licensing agreement. Intel Corp. v. ITC, 946 F.2d at 826. Subsequently, Sanyo acted as a foundry for Atmel Corp. Id. Sanyo manufactured Erasable Programmable Read-Only Memories (EPROMs) for Atmel Corp. to sell as Atmel's own product, which were designed by Atmel Corp. but allegedly infringed Intel's patents. Id. Intel initiated a patent infringement action against Atmel. In response Atmel argued that its EPROMs were noninfringing because they were manufactured by Sanyo under the broad cross-license agreement between Intel and Sanyo. Id. Essentially this defense was grounded in the patent law doctrine of 'patent exhaustion' (also called the 'first sale doctrine') which states that:

> When the patentee . . . sells a machine or instrument whose sole value is in its use, he receives the consideration for its use and he parts with the right to restrict that use. The article . . **[**73]** . passes without the limit of the monopoly.

Adams v. Burke, 84 U.S. 453, 456, 21 L. Ed. 700 (1873); see also Bloomer v. McQuewan, 55 U.S. (14 How.) 539, 549, 14 L. Ed. 532 (1852). The rationale underlying the doctrine as applied to licenses is that once the patentee has received consideration for releasing the article from the monopoly, by virtue of the license agreement, he can no longer limit or charge for its use. See U.S. v. Univis Lens Co., 316 U.S. 241, 250, 86 L. Ed. 1408, 62 S. Ct. 1088 (1942) (a patent owners monopoly ends with the first sale or disposition by a patentee, or his licensee acting within the scope of the license, or an article embodying the invention of the patent)

In Intel Corp. v. ITC, the Federal Circuit declined to accept Atmel's argument. Rather, it based its decision on its interpretation of the language of the Intel-Sanyo cross-license agreement. The court interpreted the agreement to mean that Intel licensed only *Sanyo* products. Based on this 'Sanyo limitation,' because Sanyo manufactured Atmel-designed EPROMs for Atmel Corp., the court held that the EPROMs were beyond the scope of the **[**74]** Intel-Sanyo license. The court held that, based on the language in the license,

Intel could not have possibly intended that any company in the world could get an Intel licensee like Sanyo to manufacture its infringing parts without having to get its own license from Intel. Intel Corp. v. ITC, 946 F.2d at 827-28.

While the structural relationship was the same in Cyrix and ULSI, the license agreements at issue were interpreted not to have such 'Sanyo limitations.' Therefore, in those two cases, the Federal Circuit held, based on a straightforward application of the doctrine of patent exhaustion, that the Intel licensees (SGS-Thompson and HP, respectively) were allowed to act as foundries for unlicensed third parties (Cyrix and ULSI) and that because the products were manufactured by licensees, the unlicensed third parties could not be liable for patent infringement. See Cyrix II, 77 F.3d at 1386 (affirming district court's finding that the definition of "IBM Licensed Products" in IBM-Intel agreement did not limit the products it was licensed to sell to those designed by IBM and finding that because IBM therefore had a right to act as a foundry **[**75]** for Cyrix, Intel's rights with respect to Cyrix were exhausted); Cyrix I, 803 F. Supp. at 1213-15 (finding that because Intel licensee, ST sold the finished products it manufactured **[*231]** for Cyrix to Cyrix, Intel's rights with respect to Cyrix are exhausted); ULSI, 995 F.2d at 1569-71 (finding that patent exhaustion applied to bar Intel's suit against ULSI by Intel licensee HP's manufacture and sale of the allegedly infringing to ULSI as per foundry agreement between HP and ULSI). In sum, because the Intel licensees were validly exercising their Intel-granted rights "to make" and "to sell," once those products were "sold" from the licensee/foundry to the third party, the doctrine of patent exhaustion precluded Intel from suing the third party for infringement based on the third party's subsequent sale of the product to its customers.

While this case presents a different structural relationship between the licensed and unlicensed parties and a different type of transaction than the Intel foundry cases, both parties analogize to different foundry cases to support their arguments regarding the presence or lack of contractual limitations. Intel argues that **[**76]** the license agreements contain limiting "Sanyo-type limitations," citing Intel v. ITC, while Broadcom argues that they do not, citing Cyrix II and ULSI.

(ii) "Have made" rights

While none of the licenses at issue granted to the licensee the right to sublicense its rights to a third party and in fact are restricted in that regard, it is well settled that rights to a third party can nonetheless be conferred through the valid exercise of a licensee's "have made rights." See Southwire Co. v. United States Int. Trade Comm., 67 C.C.P.A. 141, 629 F.2d 1332, 1339 (C.C.P.A. 1980) (quoting Carey v. United States, 164 Ct. Cl. 304, 326 F.2d 975, 979-80 (C.C.P.A. 1964) ("have made" rights are distinguishable from rights to sublicense: if "production is . . . for the use of the original licensee," it is an exercise of a have made right, but if the production is for the unlicensed third party itself, it is a sublicense)). "Have made" rights stem from the basic rights to make, use, and sell that are typically granted in a patent license. "The [have-made] license permits [the licensee] to engage others to do all the work connected with the production **[**77]** of the [licensed] article for him." Carey, 326 F.2d at 979.

Thus, while the foundry cases described above implicate the patent exhaustion doctrine because the first sale is made by the licensee to the unlicensed party, in "have made" cases the first sale is not by a licensee, but to a licensee. The issue is whether the scope of the "have made" license immunizes those sales from being infringing sales.

In another portion of the Cyrix II opinion, the Federal Circuit addressed this license defense issue and construed the effect of "have made" rights. In addition to the two party foundry arrangement between IBM and Cyrix, Cyrix II also involved a three-way foundry arrangement involving Cyrix, SGS-Thomson ("ST"), and a foreign subsidiary of SGS-Thomson, known as ST-Italy. While the right of SGS-Thompson to act as a foundry

for Cyrix had been resolved by the Intel foundry cases, in this arrangement, ST subcontracted the manufacture of a portion of Cyrix's microprocessors to an unlicensed manufacturer, ST-Italy. ST argued that this was a valid exercise of its "have made" and "sell" rights under its license with Intel. ST exercised that right by asking ST-Italy **[**78]** to make products, which it sold back to ST and ST ultimately sold to Cyrix. Intel, in response, argued that the transaction was in effect a sublicense which violated the license's prohibition against sublicensing because the licensee, ST, was a mere "pass-through": ST-Italy was in reality producing the microprocessors for Cyrix and not for ST. See **[*232]** E.I. du Pont de Nemours & Co. v. Shell Oil Co., 498 A.2d 1108 (Del. 1985) (holding that in "sham" transaction where sales merely passed through licensee, licensee exceeded "have made" rights).

The Federal Circuit disagreed with Intel and found that the transaction between ST and ST-Italy was a proper exercise of ST's "have made" rights. More specifically, the court stated that:

> the third party (ST-Italy) properly manufactured microprocessors under ST's 'have made' rights, and ST then properly sold the products to a different entity, Cyrix. The two agreements, one permitting ST-Italy to manufacture microprocessors for ST and the other providing for ST's sale of microprocessors to Cyrix, were separate business transactions . . . We accordingly conclude that the district court did not err in holding that the arrangements **[**79]** among ST, ST-Italy, and Cyrix were a valid exercise of ST's "have made" rights under its agreement with Intel.

Cyrix II, 77 F.3d at 1387-88z

(iii) summary: foundry rights and "have made" rights

In sum, the foundry cases stand for the proposition that unless the licensor contractually limits the licensees' rights, by exercising their rights to "make" and "sell" licensed products, licensees can shield an unlicensed reseller from infringement liability. In each of those cases, the unlicensed reseller was shielded from liability because they purchased the allegedly infringing product from the licensee, under the doctrine of patent exhaustion. The "have made" cases stand for the separate proposition that by exercising their rights to "have [licensed products] made," licensees can shield the unlicensed manufacturer who makes the products for them and subsequently sells the products to the them from infringement liability by impliedly licensing the otherwise infringing actions.

b. Is Broadcom insulated from liability for sales to Intel Licensees that have the right to "have [licensed products] made" by a third party?

In the present case, Broadcom is **[**80]** an unlicensed third party that makes allegedly infringing products. As a partial defense to Intel's patent infringement allegations, Broadcom argues that to the extent it sells those infringing products to an Intel licensee, its actions fall under the umbrella of that licensee's "have made" rights, and Broadcom is therefore shielded from infringement liability for its actions.

The only case cited by the parties that discusses a transaction that is somewhat structurally analogous to the present transaction is Cyrix II, which analyzes the above described arrangement between ST and ST Italy. According to the holding of that case, ST validly exercised its have made rights by requesting ST-Italy, an unlicensed party, to make licensed products for it. Although ST Italy's liability was not at issue in that case, it is apparent from the Cyrix II holding that ST Italy would have no patent infringement

liability for its actions of making and selling allegedly infringing products to ST. This is because ST's exercise of its "have made" right gave rise to an implied license that shielded ST-Italy from infringement.

Broadcom argues that it, like ST Italy, is an unlicensed third party that **[**81]** makes licensed products for Intel licensees. Broadcom claims that it cannot be liable for infringement for the acts of making and selling for sales of licensed products to Intel licensees, because it sells accused products to Intel licensees with "have made" rights. The issue here is what protection, if any, is afforded to Broadcom by virtue of selling to Intel licensees' **[*233]** whose licenses with Intel contain "have made" rights.

Unlicensed third party manufacturers can be immunized in this fashion where their otherwise infringing actions were performed pursuant to the exercise of a licensee's "have made" right. However, it is not clear that Broadcom's actions in this case were conducted under the licenses. An unlicensed third party in the position of Broadcom only is afforded the protections of a license if those protections are conveyed by the licensee to the third party as an exercise of the licensed party's "have made" rights. Broadcom cannot lay claim to those protections if they were never conveyed to Broadcom.

For example, assume that a licensor grants to a licensee the rights to "make, use, sell, and have made" certain licensed products. The effect of the license is to prevent **[**82]** the licensor from suing the licensee for infringement for making, using, selling, or having made the covered products. The unfettered "have made" right gives the licensee the right to designate a third party to make the product for it. Thus, when exercised, the "have made" right passes on certain protections to the third party. That third party's actions in making the product and selling the product back to the licensee become impliedly licensed.

Based on the facts thus far presented, Broadcom's actions are different from the preceding example because it is unclear whether Broadcom *made* the products pursuant to a request from the licensee, in which case the making and selling would be authorized to the extent that licensee's license allows it to be, or whether Broadcom simply *sold* allegedly infringing off-the-shelf products to parties that happen to be Intel licensees. The ST-ST Italy transaction in Cyrix II is an example of the former case. In the latter case, however, the Intel licensees cannot be said to be exercising their "have made" rights, because they are not taking protections that they have under the license and conveying them to Broadcom. Rather, when Broadcom **[**83]** makes an allegedly infringing product, that act itself constitutes an act of potential infringement. Subsequent sales of such off-the-shelf products to licensees do not convert that act of infringement into noninfringement.

This court came to the same conclusion when it previously addressed the issue of whether "have made" rights confer protections to manufacturers of "off-the-shelf" parts in Thorn EMI North America, Inc. v. Hyundai Elec. Indus. Co., CA 94-332- RRM, 1996 U.S. Dist. LEXIS 21170 (D. Del. July 12, 1996). There, this court found that "a foundry commissioned by IBM to manufacture IHS products would have the protection of the licensed agreement . . . [but that] a manufacturer of 'off the shelf' products is not a foundry . . . [and] therefore, whether or not it sold the products to IBM, would not be protected by the agreement." Thorn EMI, 1996 U.S. Dist. LEXIS 21170 at * 15.

The Intel licensees have the right to "have [products] made." This right, which is derived from the language of the patent infringement statute, supplements the licensee's right "to make" products for itself, by allowing the licensee to request a third party to **[**84]** make the product for it. The implied right to grant to the otherwise unlicensed third party the right "to make" and "to sell" the product for the licensed party (i.e. to act as a foundry) is an intrinsic part of that licensees "have made" right. Intel's granting of "have made" rights to licensees does not, however, give the licensee the inherent right to in

some way immunize prior acts of infringement through its subsequent purchase of off-the-shelf goods. To the extent that the "have **[*234]** made" right allows the licensee to purchase the licensed products off of the shelf of an unlicensed third party, that right may shield the licensee from subsequent liability for using or selling that product. However, the "have made" right in that situation does not immunize the unlicensed third party.

The legal effect of licensees exercising their "have made" rights by commissioning a third party to make licensed products is very different from the legal effect of licensees purchasing allegedly infringing products from a third party. In the first situation, the third party's acts are noninfringing (if the "have made" rights conveyed to the licensee are unrestricted), because there is a flow of rights **[**85]** that authorizes the unlicensed party's otherwise infringing acts (i.e. making, selling, or using the patented invention). These rights flow from Intel to the licensees and down to the third party manufacturer before the third party engages in any of those otherwise infringing acts. Without an agreement between each Intel licensee and Broadcom demonstrating that the products were made, pursuant to rights that flowed from the licensee to Broadcom, Broadcom's sales to the Intel licensees cannot be said to be non-infringing. Based on the facts thus far provided, no such rights flow to Broadcom in this set of sale transactions. Broadcom cannot unilaterally rely on the rights of the licensees who purchase its products, when none of those licensees' rights have been conferred onto Broadcom.

Both parties briefs focus on the scope of the rights that Intel granted to its licensees in the twelve license agreements at issue. Focusing on the agreements, the parties dispute whether the "have made" rights contain limitations that require the licensees to provide designs to unlicensed manufacturers that they ask to make the products and whether the products that the licensee may "have made" are limited **[**86]** to exclude products made by Broadcom. Determining whether Broadcom's sales to the licensees are licensed requires a two part inquiry; before the scope of the rights granted by Intel to its licensees become relevant, the court must first determine whether the licensees granted any of their rights to Broadcom. Because there is no discussion of evidence or lack of evidence of agreements between the licensees and Broadcom that demonstrates that the licensees' exercised their right to ask Broadcom to make a licensed product for them, the court need not reach the disputed issues of contract interpretation relating to the license agreements in denying each parties request for summary judgment.

The court finds that neither Intel or Broadcom has satisfied its burden in demonstrating that no genuine issues of material facts exist as to this license defense. Neither party presented facts or pointed to the absence of facts relating to whether Broadcom's production of the allegedly infringing products was done under the cover of an Intel licensee's exercise of its "have made" rights. Without knowing whether facts relating to this threshold issue exist, it would be improper for the court to grant **[**87]** summary judgment. Therefore the court will deny both Intel and Broadcom's motions.

II. CONCLUSION

With respect to Intel's motion for partial summary judgment that Broadcom is not licensed under the 830 and 410 patents under license grants of the Intel-Broadcom Joint Development Agreement, the court finds that the 830 and 410 patents are excluded from the coverage of that agreement. Accordingly, the court will grant Intel's motion. **[*235]**

With respect to the parties' cross-motions for partial summary judgment with respect to whether Broadcom's sales to General Instrument Corporation are licensed under the Motorola Agreement, the court finds that General Instrument Corporation is not a licensee under the Motorola Agreement, and therefore grants summary judgment in favor of Intel.

As to the parties' cross-motions for partial summary judgment with respect to whether Broadcom's sales to various Intel licensees are licensed under Intel license agreements, the court finds that genuine issues of material fact remain as to whether the sale transactions to Intel licensees conveyed any of those licensees' rights to Broadcom. Accordingly, the court will deny both parties' summary judgment **[**88]** motions. Should Broadcom be unable, at trial or through documents submitted with post-trial briefing, to set forth any such facts, this license defense will be without legal merit. However, should Broadcom set forth facts that indicate that Broadcom was indeed making these allegedly infringing products in response to requests by Intel licensees "to make" them, Broadcom may pursue this defense.

Regardless of the ultimate scope of protections, if any, afforded by the "have made" rights the court makes the following findings as a matter of law: (i) The Intel/AT&T Patent License Agreement cannot cover any sales made after its termination date of December 31, 1998; (ii) the Intel/AT&T Patent License Agreement does not license the 830 or 410 patents; (iii) the Intel/Mitsubishi Agreement does not license the 830 or 410 patents. Additionally, the court makes no findings at this time as to whether certain Broadcom products sold to the Intel licensees constitute "Licensed Products" under the individual Intel-licensee agreements.

The court will enter an order in accordance with this memorandum opinion.

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*172 F. Supp. 2d 516, *; 2001 U.S. Dist. LEXIS 18485, **

INTEL CORPORATION, Plaintiff, v. BROADCOM CORPORATION, Defendant.

Civil Action No. 00-796-RRM

UNITED STATES DISTRICT COURT FOR THE DISTRICT OF DELAWARE

172 F. Supp. 2d 516; 2001 U.S. Dist. LEXIS 18485

November 6, 2001, Decided

PRIOR HISTORY: Intel Corp. v. Broadcom Corp., 2001 U.S. Dist. LEXIS 18422 (D. Del. Nov. 6, 2001)

DISPOSITION: Court construed claims 1 and 10 of U.S. Patent No. 4,823,201.

CASE SUMMARY

PROCEDURAL POSTURE: Plaintiff computer chip manufacturer sued defendant alleged infringer for infringing, inducing infringement, or committing acts of contributory infringement of one or more claims of five patents. The instant opinion set forth the court's claim construction of two asserted claims, claims 1, 10, of the "201" patent.

OVERVIEW: The court previously denied a motion to dismiss and held oral arguments to construe the claims of five patents. It required that the trial proceed in two parts. The first trial was to be on the '201 and '830 patents. A subsequent trial was to cover the remaining three patents. The '201 patent generally related to techniques for reducing digital data volume and then expanding the data back to its original state so that it could be displayed and viewed normally. The invention of the '201 patent was a single-chip integrated circuit that enabled the decompression of compressed full motion video data in real time. In its construction, the court employed general principles of claim construction, and the means-plus-function elements of 35 U.S.C.S. § 112. The two claims of the '201 patent at issue were independent claims. Claim 1 was directed to a video signal processor, which included six means disputed by the parties: input means, statistical decoding means, pixel interpolating means, arithmetic data processing means, output means, and sequencing means. Claim 10 was directed to an integrated circuit for processing compressed video signals to provide decompressed video signals.

OUTCOME: The court set forth its claim construction of two asserted claims.

CORE TERMS: pixel, video, arithmetic, specification, circuitry, signal, statistical, patent, corresponding, output, input, digital, processing, decoder, decoding, register, frame, port, memory, video signal, interpolator, compressed, bit, decoded, means-plus-function, bus, encoded, generating, adder, coupled

CORE CONCEPTS - ◆ Hide Concepts

Patent Law : Infringement : Claim Interpretation

Patent claim interpretation is an issue that lies exclusively within the province of the court. In interpreting the claims of a patent, the court first looks to the intrinsic evidence of record, including the claims of the patent, the written description, and the prosecution history. Construction of the claims always begins with the language of the claims themselves. Claim terms are given their ordinary and accustomed meaning unless examination of the specification, prosecution history, and other claims indicates that the inventor intended otherwise.

Patent Law : Infringement : Claim Interpretation

In order to arrive at the proper meaning of claims, the claims must be read in view of the specification, of which they are a part. Similarly, the claims must be read in light of the prosecution history. As the United States Court of Appeals for the Federal Circuit has stated: If the claim language is clear on its face, then the court's consideration of the rest of the intrinsic evidence is restricted to determining if a deviation from the clear language of the claims is specified. A deviation may be necessary if a patentee has chosen to be his own lexicographer and use terms in a manner other their ordinary meaning. A deviation may also be necessary if a patentee has relinquished a potential claim construction in an amendment to the claim or in an argument to overcome or distinguish a reference. If however the claim language is not clear on its face, then the court's consideration of the rest of the intrinsic evidence is directed to resolving, if possible, the lack of clarity.

Patent Law : Infringement : Claim Interpretation

While extrinsic evidence may always be consulted to assist in understanding the underlying technology, it may never be used for the purpose of varying or contradicting the terms in the claims. Reliance on extrinsic evidence is proper only where analysis of the intrinsic evidence leaves the claim unclear. Dictionaries, however, are a special form of extrinsic evidence, which courts may consider along with the intrinsic evidence as part of determining a claim term's ordinary meaning.

Patent Law : Infringement : Claim Interpretation

Pursuant to 35 U.S.C.S. § 112, para. 6, a claim limitation may be recited in terms of a particular function to be performed, rather than the structure, material, or acts for performing that function. If the word "means" appears in a claim element in association with a function, 35 U.S.C.S. § 112, para. 6 is presumed to apply. Without the term "means," a claim element is presumed to fall outside 35 U.S.C.S. § 112, para. 6, unless the element relies on functional terms rather than structure or material to describe performance of the claimed function.

Patent Law : Infringement : Claim Interpretation

Where the patentees avail themselves of this means-plus-function claiming technique, the claim element shall be construed to cover the corresponding structure described in the specification and equivalents thereof. The duty to link or associate structure to a claimed function is the quid pro quo for the convenience of employing the means-plus-function claiming technique of 35 U.S.C.S. § 112, para. 6. Thus, in construing a mean-plus-function element, the court must identify both the claimed function and the corresponding structure that is disclosed in the specification that is necessary to perform that function. However, a court may not import functional limitations that are not recited in the claim, or structural limitations from the written description that are unnecessary to perform the claimed function.

Patent Law : Infringement : Claim Interpretation

35 U.S.C.S. § 112 does not permit limitation of a means-plus-function claim by adopting a function different from that explicitly recited in the claim.

Patent Law : Novelty & Anticipation

- The patent law recognizes that developments in technology are often accomplished by building on the accomplishments of predecessors. Because of this recognition, patent disclosures do not require each patent to start from scratch and teach what is well-known already; rather, the disclosure of a patent should describe what is novel. Therefore, the United States Court of Appeals for the Federal Circuit has stated that a patent need not teach, and preferably omits, what is well known in the art.

Patent Law : Specification & Claims

- The statutory language of 35 U.S.C.S. § 112, para. 6, requires the inventor to disclose structure described in the specification and equivalents thereof. As a quid pro quo for the convenience of employing means-plus-function claim language, the inventor has a duty to clearly link or associate structure to the claimed function. In addressing whether a disclosure of structure is sufficient under 35 U.S.C.S. § 112, para. 6, the United States Court of Appeals for the Federal Circuit has stated that a court should ask first whether structure is described in the specification, and, if so, whether one skilled in the art would identify the structure from the description. Thus, once some structure in the specification is identified, even if that structure is a black box, the proper inquiry then turns to whether the patent discloses sufficient structure with which one skilled in the art could use to perform the function.

Patent Law : Specification & Claims

- The law is clear that a "black box" may be used to describe structural elements that are well-known in the art and perform a common electronic function.

Patent Law : Infringement : Claim Interpretation

- Where a specification does not require a limitation, that limitation should not be read from the specification into the claims.

Patent Law : Infringement : Claim Interpretation

- Patent claims should not be construed to cover embodiments that are not supported by the specification and are contradicted by the prosecution history.

Patent Law : Infringement : Claim Interpretation

- There is a rebuttable presumption in patent law that when a claim drafter fails to use "means" in a claim element that the claim element is not a means-plus-function element. That presumption may be overcome if the claim element only provides functional terms without the recitation of structure for performing that function.

Patent Law : Infringement : Claim Interpretation

- In determining whether the claims language recites a structural term or merely recites functional terms, the court should read the claim language in light of both the specification and prosecution history. Moreover, a court should examine whether the claim element at issue has a well-understood structural meaning in the art.

Patent Law : Infringement : Claim Interpretation

- Particular embodiments appearing in a specification will not be read into the claims when the claim language is broader than such embodiments.

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JUDGES: McKELVIE, District Judge.

OPINIONBY: McKELVIE

OPINION: [*519] MEMORANDUM OPINION

Wilmington, Delaware
November 6, 2001

McKELVIE, District Judge

This is a patent case. Plaintiff Intel Corporation is a Delaware corporation with its principal place of business in Santa Clara, California. Intel owns U.S. Patent Nos. 4,823,201 (the 201 patent); 4,975,830 (the 830 patent); **5,894,410** (the 410 patent); **[*520]** 5,079,630 (the 630 patent); and 5,134,478 (the 478 patent). Defendant Broadcom Corporation is a California corporation with its principal place of business in **[**2]** Irvine, California.

On August 30, 2000, Intel filed its complaint in this case alleging that Broadcom is infringing, inducing infringement, or committing acts of contributory infringement of one or more claims of the 201 patent, the 830 patent, the 410 patent, the 630 patent, and the 478 patent.

On October 10, 2000, Broadcom moved to dismiss Intel's complaint or, in the alternative, to transfer the action to the United States District Court for the Northern District of California. After eleven months of discovery, the court heard oral argument on Broadcom's motion on September 24, 2001. In a memorandum opinion dated October 9, 2001, the court denied Broadcom's motion.

On September 24, 2001 hearing, the court also heard oral argument in accordance with Markman v. Westview Instruments, Inc., 517 U.S. 370, 134 L. Ed. 2d 577, 116 S. Ct. 1384 (1996), to construe the claims of the five patents. The claim construction issues for each of the five patents are now fully briefed by the parties.

In order to simplify the issues before the jury and to shorten the length of the jury trial, the court required that the trial proceed in two parts. The first trial will be a **[**3]** three week jury trial on the 201 and the 830 patents. A subsequent trial will cover the remaining three of the five patents.

This is the second of two memorandum opinions that will set forth the court's claim construction of asserted claims of the 201 and 830 patents. This opinion will consider the two asserted claims of 201 patent, claims 1 and 10.

I. FACTUAL AND PROCEDURAL BACKGROUND

The court draws the following facts from the parties briefing, documents submitted by the parties, and from the prosecution history of the patents at issue.

A. Background of the Technology

The 201 patent, along with the 630 and 478 patents (collectively referred to "the digital video patents"), generally relate to techniques for reducing digital data volume and then expanding the data back to its original state so that it can be displayed and viewed normally. These techniques are commonly referred to as compression (i.e. encoding) and decompression (i.e. decoding).

This section will provide background in this field of technology. In composing this section, the court draws heavily from Intel's Opening Markman Brief for the 630 Patent, in which Intel has provided an overview **[**4]** of the technology field of digital video compression and decompression that it has labeled a "technology tutorial." It does not appear that the parties dispute any of the background of the digital video field. This background section is intended to give a helpful context to the analysis of the digital video patents and should not be construed as part of the court's findings on claim construction.

1. Digital Video

As is commonly known, "video" refers to recording and displaying moving objects from the real world. For example, movies shown in a theater are produced on reels of film consisting of a long sequence of many still images, which are called frames. When the frames are run through a projector at a predefined rate (in general, 30 frames per second) and projected on a screen, the viewer experiences a sense of uninterrupted motion. Because of limitations **[*521]** in the speed in which they process sequences of images, the human eyes and brain do not detect that they are seeing a sequence of still images displayed in rapid succession.

Historically, motion video was produced, distributed, and used in analog form. Analog refers to a waveform signal that is continuously varying in strength **[**5]** or quantity, rather than based on discrete units (i.e. digital). Microsoft Computer Dictionary 22 (4th ed. 1999). Analog images, such as a photograph taken from a traditional non-digital camera, are formed from light waves, which may have infinite gradations of brightness and color.

Analog information, including images, may be represented in digital format. Digital refers to any system based on discrete numerical values, as opposed to infinitely varying analog waves. The numerical values may be based on any number system, but most often use the binary number system. The binary number system has only two possible values -- '0' and '1.' In a binary number system, each 0 or 1 is known as a bit. Using binary, bits can be combined to represent Arabic numbers, letters, words, sentences, etc. Similarly, a collection of 0s and 1s can be used to represent a still image or a motion picture.

Digitally encoded video signals contain a significant amount of redundant information. Redundancies exist within a single frame, for example, if a portion of the frame is the same color. Redundancies may also exist between consecutive frames in a sequence where all or a portion of a current frame is identical **[**6]** to a previous frame. One of the primary advantages of representing information in digital form is that by using a mathematical conversion (or compression) technique, the redundancies in the digital data may be reduced so that the data can be stored in less space or transmitted in less bandwidth. Different compression techniques are focused on exploiting different types of data redundancies to reduce the overall data volume that is necessary to represent the video information. Once the data is required for use, it can be decoded (or decompressed) using an inverse mathematical conversion which restores compressed data to its original form, or a close approximation thereof. Techniques relating to compression and decompression are largely responsible for bringing digital motion video to computers, digital cable, and DVD players.

Still and moving images, whether analog or digital, are made up of many picture elements, known as "pixels," which are the smallest element of an image. In black and white analog video, each pixel has a brightness level called luminance, which is measured along a scale from black to white to infinite shades of gray. By contrast, in black and white digital video, **[**7]** each pixel is assigned a discrete luminance value that commonly ranges between 0 and 255, which each value representing a particular luminance level. At one extreme, 0, the pixel would be painted black, whereas at the other extreme, 255, the pixel would be painted white, with all other pixel values 1-254 being painted various shades of gray. In this commonly implemented scheme, the pixel values may then be represented by binary numbers -- specifically, values 0 through 255 correspond to binary numbers 00000000 through 11111111. Thus, in black and white digital video, pixel luminance values ranging from 0 to 255 are eight bits in length.

Color digital video also has a luminance component, but it also has two components that capture information about color called chrominance. The combination of luminance and chrominance components yields color video. As with luminance, each color (or chrominance) component is assigned a value between 0 and 255. Each pixel in **[*522]** color digital video, therefore, has three eight bit values associated with it, each value between 0 and 255.

Like standard film reels, digital video is made up of a sequence of digitized frames. Each frame includes many pixels, **[**8]** with each pixel represented, for example, by numerical values from 0 to 255, or eight bits from 00000000 to 11111111 in binary format. In the U.S. most televisions display a format known as standard definition television, or "SD-TV." In SD-TV, each frame has up to 480 horizontal lines of pixels and up to 720 pixels per line. Thus, a single frame of SD-TV video has as many as 345,600 pixels. North American television also uses approximately 30 frames per second of video, meaning that over 10 million pixels are displayed per second. That means that SD-TV uses as much as nearly 240 million bits per second.

A new television format currently being deployed in the U.S. is known as high definition television, or "HD-TV." HD-TV, which promises a clearer more lifelike picture, achieves that result by using many more pixels horizontally and vertically than SD-TV, with up to 1080 lines of pixels and up to 1920 pixels per line. HD-TV may use over 2 million pixels in a single frame and a 30 frames per second, which translates to over 1.4 billion bits per second.

The enormous bit volume of either SD-TV or HD-TV places a heavy burden on devices used to store digital video data -- such as CD-ROMs, **[**9]** DVDs, and computer hard disks -- and on digital video transmission systems, including digital cable and satellite TV systems. As a result, various techniques for reducing data volume are used in the storage and transmission of digital video data.

2. Compression and Decompression

As noted above, compression or encoding is used to reduce digital data volume so that it can be stored in less space or transmitted using less bandwidth, whereas decompression or decoding restores compressed data to its original form or a close approximation thereof. Microsoft Computer Dictionary 102, 457 (4th ed. 1999).

There are two key measures of the success of the compression-decompression system that is to be used to encode and decode digital video data. First, a compression technique must be able to achieve an extremely high degree of compression. Intel's 630 patent is directed "to meeting the need for a compression system for providing a compressed digital video signal representative of a full motion color video signal." Col. 1:47-49.

The second important feature of a compression-decompression system that is designed to

handle digital video, is that a decompression technique must be able to **[**10]** be applied quickly. To allow for smooth video playback without jerkiness or blocky artifacts on a computer, cable system, or DVD player, the compressed data must be decoded in "real-time." Real time computer operations must proceed at the same rate as a physical or external process; in this case, at the same rate that video is displayed and watched, i.e. 30 frames per second. Id. at 375.

B. The Patented Technology

The invention of the 201 patent is a single-chip integrated circuit that enables the decompression of compressed full motion video data in real time. To understand how the 201 patent decompresses compressed data, it is first necessary to understand some of the principles behind the different types of video compression techniques.

1. Relevant Encoding and Decoding Techniques

One class of techniques that are designed to reduce redundancies within a **[*523]** single frame is called absolute (or intra-frame) encoding. Assume that a frame shows a balloon drifting across a blue sky. In this example, the color of a ten pixel block that is part of the background sky is completely uniform. An absolute encoding technique exploits this redundancy by indicating that **[**11]** a certain number of pixels all have the same digital value. In a black and white digital system, instead of transmitting the 8-bit luminance value for each of the ten pixels (80 bits), one can encode the consecutive pixels by simply sending one 8-bit luminance value and a short ten bit code saying "repeat that pixel value 9 more times." Instead of sending 80 bits, the encoder can send the information about those ten pixels using 18 total bits. The encoder processes the data, determines the redundancy, and send the 18 bits to a decoder, which displays the 8 bit pixel once, and then sends the 10-bit re-display code. The decoder recognizes this code as meaning re-display the same pixel 9 times, and performs this operation, as instructed.

A second class of techniques that is used to reduce redundancies that exist between two consecutive frames is called relative (or inter-frame) encoding. Given that each frame represents 1/30 of a second, the content of consecutive frames is often very similar. In the example of the balloon drifting across the sky, the only difference between certain blocks of pixels that represent the blue sky in the two consecutive frames is that the color of the sky **[**12]** in the current frame is slightly different. Instead of transmitting all of the bits associated with each block of pixels in a frame, relative encoding techniques are used to capture information about the differences between the previous frame and the current frame. To generate this difference information, the encoder compares the two frames and creates a difference image, which only represents the differences in the relative pixel values. The encoder first sends to the decoder an intra-frame encoded version of the first frame. Then, instead of transmitting the next frame, the encoder can transmit information, in the form of a few bits of code, to the decoder that tells the decoder how to construct the current frame using the previous frame, which the decoder already has, and the difference information. When the current frame and previous frame are similar, this technique requires fewer bits than transmission of both frames, because the digital values of the difference image are typically small numbers, which require fewer bits to transmit.

Relative encoding also involves another similar principle known as motion compensation. Again referring to the example of the balloon drifting **[**13]** across the sky, one of the only differences between two consecutive frames is that the balloon in the current frame has moved, or shifted slightly, to a different location. Much of the background information is redundant. In order to encode for motion compensation, the encoder seeks to determine the motion of the balloon by selecting a block of pixels corresponding to the balloon in the current frame, or a portion of the balloon, and searching the previous frame

to find a block of identical, or closely matching pixels. Once it finds a match, the encoder determines how far and in what direction, the block of pixels in the current frame has moved with respect to the block in the previous frame. In this way, the encoder generates a motion vector or displacement vector, which represents the direction and magnitude of motion of the current frame relative to the matching previous frame block. This vector, simply stated, represents the number of pixels the balloon has moved across the frame.

Once the encoder determines the motion vector, it applies the motion vector to a reconstructed version of the previous **[*524]** frame, to obtain a prediction of the block in the current frame. Because both the **[**14]** encoder and decoder keep a copy of the reconstructed previous frame, they operate on the same image when applying the motion vector. The encoder uses the predicted block from the reconstructed previous frame to generate a difference image. The encoder sends the motion vector and the difference image to the decoder. The difference image is typically encoded using absolute encoding, and the motion vector may be encoded in the same fashion. The decoder uses the decoded motion vector to obtain the predicted block from the decoder's copy of the reconstructed previous frame. Finally, the decoder adds the pixel values in the decoded difference image to obtain the block that will be displayed in the current frame.

Again, motion compensation encoding techniques applied in this manner achieves compression because the encoder need transmit only the encoded difference image and motion vector to the decoder, rather than the current frame. Generally, the encoded error image and motion vector are represented in fewer bits than an absolute encoding block of the current frame.

2. The '201 Patent

As noted above, the 201 patent relates to a high-speed, single chip video processor that receives **[**15]** an encoded (i.e. compressed) video signal and rapidly decodes that signal to generate an uncompressed full motion video output signal that can be displayed on a television or computer monitor. The video processor includes a statistical decoder, a pixel interpolator, and arithmetic logic circuitry, all of which are controlled by a sequencer.

The statistical decoder decompresses information that has been compressed using statistical encoding. Statistical encoding is an encoding technique that involves assigning short bit strings for data that occurs frequently, and long codes for data that occurs infrequently. For example, if 8 bit pixels are used, there can be 256 unique pixel values. A unique variable-length-code ("VLC") is assigned to represent each of the 256 pixel values according to their statistics -- the higher the frequency of occurrence of a particular pixel value, the shorter the code, and vice versa. The statistical decoder receives the VLCs and translates them back into the original 8-bit pixel values.

The pixel interpolator of the 201 patent is used in the decoding of inter-frame coded images. As discussed inter-frame coding is performed by searching a previous image **[**16]** for a matching region, encoding the location of that region as a motion vector, and encoding a difference image for the region. Sometimes, however, a matching pixel region is not found on a pixel border. Instead, the best match may be found between adjacent columns or rows of pixels. In such instances, the decoding processor must provide the previously decoded pixel values designated by a motion vector (called an "offset" in the 201 patent) to the pixel interpolator for interpolation. Operating on the pixels from the previously decoded image, the pixel interpolator generates "interpolated pixel values" that approximate pixel values between the pixel values from the previously decoded image retrieved from memory. For a large block of pixels, interpolation is performed successively to obtain a block of "interstitial" pixel values.

The arithmetic logic circuitry performs arithmetic operations (such as addition) or logical

operations (such as AND or OR). For example, during inter-frame encoding, arithmetic logic circuitry may be used to add interpolated pixel values from the previously decoded video image to error data from the current video image.

The sequencer conditions the statistical **[**17]** decoder, pixel interpolator, and arithmetic **[*525]** logic circuitry to operate simultaneously to produce decoded and decompressed pixel data. As compared with each element performing its function in serial, simultaneous operation allows the decoding process to be performed faster.

The following diagram is a simplified version of the disclosed video signal processor that is taken from Figure 2 of the 830 patent. The elements discussed above can be seen in the diagram. The next few paragraphs will describe how the elements in the diagram interrelate to comprise a video signal processing system that embodies the invention of the 830 patent.

[SEE DIAGRAM IN ORIGINAL]

As described in the patent specification, the circuitry set forth above operates as follows. Compressed video signals are provided to the video signal processing system from a source of compressed video, that is labeled in Figure 2 of the patent (and in the above Figure) with the number 212. This source can be a CD-ROM, a DVD, etc. The compressed video signals are stored in the Video Random Access Memory (VRAM 216), which, as indicated by the dashed line, is located off of the video processing chip. The VRAM stores compressed **[**18]** data that is received from the source. It also stores decoded pixel data from the previous image that has been decoded. The compressed data and decoded pixel data are sent along a data bus to the statistical decoder (Stat Decoder 230) and to the input FIFO's (232 and 234). The term FIFO means first in first out. FIFO's are data storage elements in which data is removed in the same order in which it is received (i.e. in a first in, first out fashion).

The statistical decoder receives statistically encoded data and decodes it. This decoded data may be provided to the arithmetic and logic unit (ALU 244) for further processing.

The input FIFO's receive compressed data that is not statistically encoded and decoded pixel data. The input FIFO's **[*526]** may provide this data to the ALU for further processing. The input FIFO's may alternatively send the compressed data and decoded pixel data to the Data RAM (228), which provides temporary storage. Decoded pixel data is provided to the pixel interpolator (246) for "pixel interpolation," which generates interstitial pixel values that are used to describe the encoded image.

Interpolated pixel values are applied to the ALU together with the values provided **[**19]** by the statistical decoder for further processing that adds the interpolated pixels to the difference data. The result of the ALU's operations, the decoded pixels for display, may then be routed to the output FIFO. This decoded data from the output FIFO is stored in the VRAM, which is then accessed by a display processor (not shown) that displays the decompressed video signal.

The central control element in the above described circuitry is the Microcode RAM and Sequencer (226). This circuit element controls the timing and operation of the other blocks, including the pixel interpolator, the statistical decoder, and the ALU.

Another element whose purpose is coordination is the VRAM control unit (238). The VRAM control unit coordinates data access request to the VRAM (216) from the compressed data source (212), the display processor, and the other on-chip circuitry to ensure that all of the data provided by the data source is written into the VRAM. To do so, it generates address and control signals for the off-chip VRAM.

C. Relevant Procedural History of the '201 Patent

The 201 patent issued from an application that was first filed on November 16, 1987. In that application, claims **[**20]** 1 and 9 correspond to the issued claims 1 and 10. On January 19, 1988, before any action had been taken by the Patent Examiner, the applicants submitted a preliminary amendment, which amended language in certain of the claims and added a new claim dependent on claim 6, which later issued as claim 7. Claim 9, which issued as claim 10, was amended as follows: n1

> 9. An integrated circuit for processing compressed video signal, segments of which having been encoded using different encoding processes, to provide decompressed video signal representing moving images, said integrated circuit comprising:
>
> an I/O port for coupling said integrated circuit to memory means;
>
> an address output port for coupling address signals to said memory means;
>
> a statistical decoder coupled to said I/O port for decoding variable-length-encoded compressed video signals;
>
> I/O circuitry coupled to said I/O port, for providing processed video signal to said I/O port, and for [providing] accepting a processed video signal from said I/O port;
>
> a pixel interpolator for generating values representing pixels interstitial to pixel values represented by said processed video signal;
>
> arithmetic processing **[**21]** means responsive to control signals, for performing arithmetic and Boolean functions on binary values;
>
> means responsive to further control signals for selectively interconnecting said statistical decoder, said I/O [means] circuitry, said pixel interpolator and said arithmetic processing means;
>
> **[*527]** control means for generating said control signals and said further control signals to selectively condition said arithmetic processing means to perform one of a plurality of decoding algorithms on compressed video data provided at said I/O port; and
>
> address generating means coupled to said address output port and responsive to at least said control means for generating memory address signals for said memory means.

- - - - - - - - - - - - - - - - - -Footnotes- - - - - - - - - - - - - - - - - -

n1 Text that is underlined is text that was added in the Jan. 19, 1988, amendment, while text that is enclosed in brackets refers to pre-amendment language that was removed in the amendment.

- - - - - - - - - - - - - - - - - -End Footnotes- - - - - - - - - - - - - - - - -

The Examiner did not issue an office action in response to the application. On July 21, 1988, the Examiner **[**22]** issued a Notice of Allowance, allowing claims 1 and 10 to

issue without rejection. The 201 patent issued on April 18, 1989.

II. DISCUSSION

A. Principles of Claim Construction

1. General Principals

Patent claim interpretation is an issue that lies exclusively within the province of the court. Markman, 517 U.S. at 372. "In interpreting the claims of a patent, the court first looks to the intrinsic evidence of record, including the claims of the patent, the written description, and the prosecution history." Phillips Petroleum Co. v. Huntsman Polymers Corp., 157 F.3d 866, 870 (Fed. Cir. 1998). Construction of the claims always begins with the language of the claims themselves. See Bell Comm. Research, Inc. v. Vitalink Comm. Corp., 55 F.3d 615, 619-20 (Fed. Cir. 1995). Claim terms "are given their ordinary and accustomed meaning unless examination of the specification, prosecution history, and other claims indicates that the inventor intended otherwise." Transmatic, Inc. v. Gulton Indus., Inc., 53 F.3d 1270, 1277 (Fed. Cir. 1995).

In order to arrive at the proper meaning of claims, the claims "must **[**23]** be read in view of the specification, of which they are a part." Markman v. Westview Instruments, Inc., 52 F.3d 967, 979 (Fed. Cir. 1995) (en banc) aff'd, 517 U.S. 370, 134 L. Ed. 2d 577, 116 S. Ct. 1384 (1996). Similarly, the claims must be read in light of the prosecution history. As the Federal Circuit has stated:

> If the claim language is clear on its face, then [the court's] consideration of the rest of the intrinsic evidence is restricted to determining if a deviation from the clear language of the claims is specified. A deviation may be necessary if "a patentee [has chosen] to be his own lexicographer and use terms in a manner other their ordinary meaning." Vitronics Corp. v. Conceptronics, Inc., 90 F.3d 1576, 1582 (Fed. Cir. 1996). A deviation may also be necessary if a patentee has "relinquished [a] potential claim construction in an amendment to the claim or in an argument to overcome or distinguish a reference." Elkay Mfg. Co. v. Ebco Mfg. Co., 192 F.3d 973, 979 (Fed. Cir. 1999). If however the claim language is not clear on its face, then [the court's] consideration of the rest of the **[**24]** intrinsic evidence is directed to resolving, if possible, the lack of clarity.

Interactive Gift Express, Inc. v. Compuserve Inc., 231 F.3d 859, 865 (Fed. Cir. 2000).

While "extrinsic evidence may always be consulted . . . to assist in understanding the underlying technology," it "may never be used 'for the purpose of varying or contradicting the terms in the claims.'" Id. at 866 (quoting Markman, 52 F.3d at 979). Reliance on extrinsic evidence is proper only where analysis of the intrinsic evidence leaves the claim unclear. Bell Comm., 55 F.3d at 619-20. Dictionaries, however, are a special form of extrinsic evidence, which courts may consider along with the intrinsic evidence **[*528]** as part of determining a claim term's ordinary meaning. Interactive Gift, 231 F.3d at 866.

2. Construction of Means-Plus-Function Elements Under 35 U.S.C. § 112, P 6

Pursuant to 35 U.S.C. § 112, P 6, a claim limitation may be recited in terms of a particular function to be performed, rather than the structure, material, or acts for performing that function. 35 U.S.C. § 112, **[**25]** P 6. If the word "means" appears in a claim element in association with a function, § 112, P 6 is presumed to apply. Micro

Chem., Inc. v. Great Plains Chem. Co., 194 F.3d 1250, 1257 (Fed. Cir. 1999). Without the term "means," a claim element is presumed to fall outside § 112, P 6, unless the element relies on functional terms rather than structure or material to describe performance of the claimed function. Id.

Where the patentees avail themselves of this means-plus-function claiming technique, the claim element "shall be construed to cover the corresponding structure . . . described in the specification and equivalents thereof." Id. The duty to link or associate structure to a claimed function is the quid pro quo for the convenience of employing the means-plus-function claiming technique of § 112, P 6. B. Braun Medical Inc. v. Abbott Labs., 124 F.3d 1419, 1424 (Fed. Cir. 1997). Thus in construing a mean-plus-function element, the court must identify both the claimed function and the corresponding structure that is disclosed in the specification that is necessary to perform that function. See Micro Chem., 194 F.3d at 1258. **[**26]** However, "a court may not import functional limitations that are not recited in the claim, or structural limitations from the written description that are unnecessary to perform the claimed function." Id.; see also Wenger Mfg., Inc. v. Coating Machinery Sys., Inc., 239 F.3d 1225, 1233 (Fed.Cir. 2001).

B. Construction of the '201 Patent

There are two claims of the 201 patent that are at issue in this suit. Both are independent claims. The first claim at issue is claim 1, and the second is claim 10. The court will construe each of these claims in turn.

1. Construction of Claim 1

Claim 1 is directed to a video signal processor. The video signal processor includes an input means, a statistical decoding means, a pixel interpolating means, an arithmetic data processing means, an output means, and a sequencing means.

Specifically, claim 1 of the 201 patent recites:

> 1. A video signal processor including:
>
> input means for applying digital data representing a video image including compressed video data and pixel data, wherein a portion of said digital data is statistically encoded;
>
> statistical decoding means, coupled to said input means and **[**27]** responsive to a control signal for decoding the statistically encoded digital data provided by said input means to generate decoded digital data;
>
> pixel interpolating means, responsive to said control signal and to the pixel data provided by said input means for developing interpolated pixel values representing pixels in said video image which are interstitial to pixels in said video image that are represented by said pixel data;
>
> arithmetic data processing means, responsive to said control signal, for performing arithmetic operations on the digital data provided by said statistical decoding means and on the **[*529]** interpolated pixel values provided by said pixel interpolating means;

output means, coupled to said arithmetic data output means, processing means for providing processed video data from said arithmetic data processing means as an output signal; and

sequencing means for generating said control signal to condition said statistical decoding means, said arithmetic data processing means and said pixel interpolating means to operate simultaneously to produce decoded and decompressed pixel data as said output signal.

Col. 60:4-35.

a. "Input means for applying **[**28]** digital data representing a video image including compressed video data and pixel data, wherein a portion of said digital data is statistically encoded."

The parties dispute the construction of the phrase "input means for applying digital data representing a video image including compressed video data and pixel data, wherein a portion of said digital data is statistically encoded." Both parties agree that this element is written in means-plus-function format and is thus subject to the requirements of § 112, P 6. The parties also seemingly agree that the claimed function of the "input means" element is the phrase that follows the word "for" in the element: "applying digital data representing a video image, including compressed video data and pixel data, wherein a portion of the digital data is statistically encoded." The court agrees with the parties that this is the function of the "input means" and therefore adopts it as the court's construction of the function.

There is some disagreement between the parties as to the proper meaning of the terms that comprise the function. For the sake of clarity, the court will construe these terms. First, the term "compressed video data" means **[**29]** video data that has been reduced to facilitate transmission or storage. Microsoft Computer Dictionary 102, 468 (4th ed. 1999). The term "pixel data" means decoded pixel data from a previously decoded video image. See col. 26:36-40 ("the pixel interpolator develops interpolated pseudo-pixel values, from the pixel values of a previous image, as a step in developing pixel values for the current image"). The ordinary meaning of the term "digital data [that] is statistically encoded" is digital data that is variable-length-encoded. See, supra I.B.2. Variable-length-encoding techniques, such as Huffman Coding, are discussed and referenced in the specification of the 201 patent. Col. 2:58-3:5. Thus, in more plain language, the function of the "input means" is applying digital data representing a video image, including compressed video data and decoded pixel data from a previously decoded video image, where a portion of the digital data applied by the input means is variable-length-encoded.

The parties dispute regarding this element centers on the corresponding structure that is associated with the input means. Intel claims that the corresponding structure in the specification **[**30]** for the input means is a data bus called "D BUS," which is represented in Figure 2. A "bus" is a data transmission path that interconnects different devices. Figure 2 discloses that the D BUS applies digital data including compressed video data and pixel data, a portion of which is statistically encoded, from VRAM 216 to the video processing circuitry 210. See col. 4:50-53 (broad arrows represent buses for conveying multiple-bit parallel digital signals); see also col. 5:3-9 (compressed video signal data, which includes statistically encoded data, is stored in VRAM).

[*530] Broadcom disagrees with Intel's assertion that the structure disclosed in the specification that corresponds to the input means is the D BUS. Rather, Broadcom argues that, the patent identifies the specific circuitry associated with the VRAM control unit, the

statistical decoder, and the input FIFO's as the corresponding structure for performing the input means function. In support of this contention, Broadcom points to several sections of the specification, that Broadcom characterizes as mandating the 'applying function' is performed by the structure identified by Broadcom above. First, Broadcom notes that the **[**31]** specification states that "the data provided by the source 212 is *applied* to a video random access memory (VRAM) 216 under control of a VRAM control unit." Col. 5:7-11 (emphasis added). Broadcom also draws support from another section of the specification that states that "compressed video signals are accessed via the statistical decoder 230 and the input FIFO's 232 and 234 under control of the sequencing circuitry 226."

First, it should be noted that the VRAM control unit cannot be included as part of the input means structure because it is a control element and cannot itself "apply data." The VRAM control unit does not perform the function of applying digital data; rather, it applies instructions to the off-chip VRAM. Consequently, the court will not consider the VRAM control unit as part of the corresponding structure of the input means. See Kegel Co. v. AMF Bowling, Inc., 127 F.3d 1420, 1428 (Fed. Cir. 1997) (holding that a "controller" that activated the shifting of wicks was not part of the "means for selectively and independently shifting each of said wicks). The court will therefore consider whether the corresponding structure of the input means is the **[**32]** D BUS or the statistical decoder and the input FIFO's.

The ordinary meaning of "input," although somewhat circular, is "the means by which or the point at which an input (as of energy, material, or data) is made." Merriam-Webster New Collegiate Dictionary 591 (1981). Therefore, the ordinary meaning of an input means in the context of this invention is the path or point by which data enters a component. This definition, however, provides support for both parties positions. Intel interprets this term to mean that the structure is the data path that provides data to other components (the input FIFOs and the statistical decoder). Broadcom, however, interprets this term to mean that the structure associated with the function of "applying" is those other components themselves.

In light of the claim language, the court finds Intel's proposed construction to be more persuasive. The next element to be construed, the statistical decoding means, references the input means. That element claims a "statistical decoding means, coupled to said input means." Looking ahead, the parties agree that the structure associated with the statistical decoding means is the statistical decoder 230, the only **[**33]** statistical decoder described in the specification. If the structure associated with the input means included the statistical decoder, the structure associated with the next element would the statistical decoder coupled (i.e. electrically connected) to itself. This reading would be strained. Standing alone, the input FIFOs cannot perform the claimed function because they do not process "statistically encoded data"; rather, they only process "pixel data." Thus, the better reading of the structure of the input means is the data path (BUS D in Figure 2) that connects components. Adopting this corresponding structure, the structure associated with the following element would be the statistical decoder coupled to a specific data path. This reading makes more sense.

[*531] The parties dispute as to the proper construction of the structure seems to center on the use of the term "apply" to describe the function. The word "apply," read in context of the specification, seems to be analogous with the word provide. See Col. 5:8-9 ("data provided by the source 212 is applied to . . . VRAM 216"). The specification also indicates that this apply/provide function is done via data buses. See Col. **[**34]** 5:42-46 ("data values provided . . . are applied to [components] via a bidirectional BUS B. The BUS B is also used to provide address values to the VRAM control unit."). Data BUS D is capable of performing the function of providing "digital data representing a video data and pixel data, wherein a portion of said digital data is statistically encoded." Accordingly, the court finds that the corresponding structure that is disclosed for the input

means is BUS D.

b. "Statistical decoding means, coupled to said input means, and responsive to a control signal for decoding the statistically encoded digital data provided by said input means to generate decoded digital data."

The parties dispute the construction of the phrase "statistical decoding means, coupled to said input means and responsive to a control signal for decoding the statistically encoded digital data provided by said input means to generate decoded digital data." Both parties agree that this element is written in means-plus-function format and is thus subject to the requirements of § 112, P 6. The parties also agree in the general sense that the function of the statistical decoding means is the phrase that follows **[**35]** the word "for" in the element: "decoding the statistically encoded digital data provided by said input means to generate decoded digital data." Broadcom, however, claims that decoding statistically encoded digital data means "to translate variable length encoded video data into fixed-length, 16-bit video data." Intel opposes reading into the claims the functional limitation requiring the result to be "fixed-length, 16-bit video data." Intel asserts that "decoded digital data" simply means digital data that has been decoded by reversing statistical (i.e. variable-length) encoding, and argues that the functional limitations urged by Broadcom are not included in the stated function. The court agrees, and declines to adopt Broadcom's proffered modifications to the stated function of this element. See Micro Chem., 194 F.3d at 1258 ("The statute does not permit limitation of a means-plus-function claim by adopting a function different from that explicitly recited in the claim.")

Turning to the corresponding structure, both parties agree that the corresponding structure for the statistical decoding means is the statistical decoding circuitry 1014, see Fig. 10A, which **[**36]** is contained inside the functional box labeled statistical decoder 230 in Figure 2. This much is clear from the specification, which states: "The system includes a statistical decoder which generates fixed-length data values from variable-length-encoded data provided by a source of compressed video information." Col. 3:33-35. Furthermore, the specification states that Figure 10A "is a block diagram of a statistical decoder suitable for use in the video signal processing circuitry shown in Fig. 2." Col. 4:18-20. Figure 10A includes a box labeled "Statistical Decoding Circuitry (1014)," which contains the structure where the claimed function is performed. See 33:16-21.

While agreeing that this "black box" is the structure identified in the patent specification, Broadcom asserts that this disclosure alone is insufficient to comply with the requirements of § 112, P 6. Broadcom points to a section of the specification that notes that:

> **[*532]** The statistical decoding circuitry 1014 used in this embodiments of the invention may, for example, be of the type described in U.S. Pat. No. 4,396,906 entitled "Method and Apparatus for Digital Huffman Encoding," which is hereby incorporated **[**37]** by reference. Col. 33:22-26.

Broadcom therefore claims that the structure of the statistical decoding means cannot simply be the "black box" shown in Figure 10A, but instead must include all of the detailed structural components of the statistical decoding circuitry that is shown and described in the 906 patent. In response, Intel asserts that, because such circuitry was well-known in the art and performs a common electronic function, the black box disclosure is sufficient.

This difference of opinion regarding the structural sufficiency of black boxes is a recurring

argument in the parties briefs with respect to numerous means-plus-function elements. The court will address this issue in the following paragraphs.

The patent law recognizes that developments in technology are often accomplished by building on the accomplishments of predecessors. Because of this recognition, patent disclosures do not require each patent to start from scratch and teach what is well-known already; rather, the disclosure of a patent should describe what is novel. See In re Gay, 50 C.C.P.A. 725, 309 F.2d 769, 774 (CCPA 1962) ("Not every last detail is to be described, else patent **[**38]** specifications would turn into product specifications, which they were never intended to be."); Loom Co. v. Higgins, 105 U.S. (Otto) 580, 586, 26 L. Ed. 1177 (1881) ("That which is common and well known is as if it were written out in the patent and delineated in the drawings."). Therefore, the Federal Circuit has stated that "[a] patent need not teach, and preferably omits, what is well known in the art." Spectra-Physics, Inc. v. Coherent, Inc., 827 F.2d 1524, 1534 (Fed. Cir. 1997).

The statutory language of § 112, P 6, however, requires the inventor to disclose "structure . . . described in the specification and equivalents thereof." 35 U.S.C. § 112, P 6. As a quid pro quo for the convenience of employing means-plus-function claim language, the inventor has a duty to clearly link or associate structure to the claimed function. B. Braun Med., Inc., 124 F.3d at 1424. In addressing whether a disclosure of structure is sufficient under § 112, P 6, the Federal Circuit has stated that a court should "ask[] first whether structure is described in the specification, and, if so, whether one skilled in the art **[**39]** would identify the structure from the description." Atmel Corp. v. Information Storage Devices, Inc., 198 F.3d 1374, 1382 (Fed. Cir. 1999). Thus, once some structure in the specification is identified, even if that structure is a black box, the proper inquiry then turns to whether the patent discloses sufficient structure with which one skilled in the art could use to perform the function. See S3, Inc. v. n VIDIA Corp., 259 F.3d 1364, 1370-71 (Fed. Cir. 2001) (holding black box labeled "SEL" was sufficient structure because it was "a well known electronic structure and performs a common electronic function"); Budde v. Harley-Davidson, Inc., 250 F.3d 1369, 1381-82 (Fed. Cir. 2001) (holding that box labeled "Vacuum Sensor" and passage which notes that vacuum sensors were well known in the art at the time the patent issued sufficiently disclosed structure); Ampex Corp. v. Mitsubishi Elec. Corp., 966 F. Supp. 263, 270 (D. Del. 1997) (finding that to persons of ordinary skill in the art, block diagrams represent a number of different ways of implementing a circuit). The proper inquiry in this case therefore turns on whether **[**40]** the structure that is defined in the patent by a black box was well-known in the field of video compression **[*533]** and decompression at the time of the application of the patent.

In this case, it is clear that variable length (statistical) encoders were well known in the art. First, the Background section of the patent specification itself explains that "Variable length statistical encoders which perform this type of compression are known in the art." See Col. 2:67-3:3. The patent specification also refers to U.S. Pat. No. 4,125,861, which describes such an encoder. A statistical decoder simply reverses the process applied by the statistical encoder. Thus, if statistical encoders were well known at the time the 201 patent was filed, so were statistical decoders.

This conclusion is further confirmed by the declaration of Intel's expert, Dr. Brian Von Herzen. Dr. Von Herzen identifies a number of patents which disclose statistical decoders that predated the filing of the 201 patent. Von Herzen Decl. P 18. He also states that one of ordinary skill in the art at the time of the 201 invention could have constructed a statistical decoder. Id.

Moreover, the specification states that **[**41]** "Figure 10A is a block diagram of a statistical decoder suitable for use" in the patented video signal processing circuitry. Col. 4:18-20. The 906 patent was not the only known way to perform statistical decoding; it was merely an example of a device that was well-known in the art. See Budde, 250 F.3d

at 1381-82 (distinguishing Atmel Corp. and noting that black box structure for vacuum sensor was sufficient because the record reflected that vacuum sensors were well known in the art). The inventors of the 201 patent should not be penalized by improperly limiting the structure of the statistical decoding means to that one embodiment. Accordingly, the court finds that the statistical decoding circuitry 1014 is sufficient to impart the necessary structure for the "statistical decoding means."

It should be noted that the claim language also requires that the statistical decoding means be coupled (i.e. electrically connected directly or indirectly) to the input means, and be responsive (i.e. respond or react) to a control signal. The term "control signal" is a well-understood term in the art that means an electronic signal used to control internal or external devices **[**42]** or processes. See Microsoft Computer Dictionary 112 (4th ed. 1999). Naturally, the control signal itself is not a means-plus-function element, and is therefore not itself part of the structure that performs the function of the "statistical decoding means." See O.I. Corp. v. Tekmar Co., 115 F.3d 1576, 1581 (Fed. Cir. 1997).

c. "Pixel interpolating means, responsive to said control data signal and to the said input means for developing interpolated pixel values in said video image which are interstitial to pixels in said video image that are represented by said pixel data."

The parties dispute the construction of the phrase "pixel interpolating means, responsive to said control signal and to the pixel data provided by said input means for developing interpolated pixel values representing pixels in said video image which are interstitial to pixels in said video image that are represented by said pixel data." Both parties agree that this element is written in means-plus-function format and is thus subject to the requirements of § 112, P 6.

The parties agree that the function of the pixel interpolating means is the phrase that follows the word "for" in the element: **[**43]** "developing interpolated pixel values representing pixels in said video image which are interstitial to pixels in said video image that are represented by said pixel data." **[*534]** Within that phrase, the term "pixel data" again refers to decoded pixel data from a previously decoded image. The phrase "developing interpolated pixel values representing pixels in said video image which are interstitial to pixels in said video image that are represented by said pixel data" indicates that pixel values are created for a current image being decoded that are between pixels from a previously decoded image. See Fig. 9A.

As described in the specification, in the context of moving images, a segment or region of an image may have been encoded by storing the direction and magnitude of movement in the segment relative to a corresponding segment contained in the previous image in the video sequence. See Col. 22:53-56. These movement values, or motion vectors, may be expressed in terms of fractions of the distance between pixels. However, because a video signal that is sampled at regular intervals can only be shifted by integer multiples of the horizontal and vertical distance between adjacent pixels, **[**44]** the processor uses circuitry called a pixel-interpolator to generate "pseudo-pixel" values to account for the fractional movements. Because these interpolated "pseudo-pixel" values are approximated values in between the actual pixel values, they are referred to as "interstitial" (i.e. in between) actual pixels. See col. 22:64-23:2; Col. 25:36-41; Microsoft Computer Dictionary 245 (4th ed. 1999); Webster's Third New Int'l Dictionary 1183 (Unabridged ed. 1986). The use of fractions in this manner increases the accuracy of the final image presentation.

The parties again dispute what should be included in the corresponding structure for the function of the pixel interpolator as described above. Intel urges the court to find that the "black box" block diagram labeled "Pixel Interpolator 246" in Figure 2 is the corresponding structure that is disclosed, because pixel interpolators were well-known in the art. Broadcom argues in response that the court should find that the more specific structure

for the pixel interpolator found in Figure 8A is the disclosed structure.

The specification states that "Fig. 8A is a block diagram of the pixel interpolator used in the embodiment of the invention **[**45]** shown in Fig. 2." Col. 4:10-12. It is clear, therefore, that Figure 8A is a more detailed description of the structure inside the "black box" Pixel Interpolator 246 in Figure 2. If the inventors intended to disclose a generic pixel interpolator that was well-known in the art, they could have stopped their definition of the pixel interpolator at the "black box" of Figure 2 and said so. They did not. Accordingly, the court finds that to identify the corresponding structure merely as the "black box," without at least examining the more detailed disclosure to determine if it discloses structure that is required to perform the claimed function, would be disingenuous.

Intel, however, argues in the alternative that even if the court accepts Broadcom's argument with respect to Figure 8A, that the court should not find that all of the structure of Figure 8A is the "corresponding structure" for the pixel interpolation function. Intel claims that according to Federal Circuit precedent, the court must look to Figure 8A and then parse it to determine what pieces of the structure disclosed within are "necessary" to perform the recited function of "developing interpolated pixel values representing **[**46]** pixels in said video image which are interstitial to pixels in said video image that are represented by said pixel data." See Micro Chem., 194 F.3d at 1258 ("the statute . . . [does not] permit incorporation of structure from the written description beyond that necessary to perform the claimed function").

[*535] The court agrees the components in Figure 8A that are not necessary to perform the recited function of the pixel interpolating means should not be not included in the corresponding structure of that element. If the court included unnecessary structure as "corresponding structure," this would impermissibly narrow the claimed function.

According to the declaration of Dr. Von Herzen, the only elements within Fig. 8A that are necessary to perform the function of "developing interpolated pixel values representing pixels in said video image which are interstitial to pixels in said video image that are represented by said pixel data" are registers 804 and 806 and adder 856. Von Herzen Decl. P 26-27. Dr. Von Herzen supports this conclusion by examining the specification of the 201 patent, which provides the general equation for performing pixel interpolation and discloses **[**47]** that the basic operation of pixel interpolation is weighted averaging. In its simplest form, the pixel values A and B of two adjacent pixels are averaged. The average is the sum of two pixels divided by two. According to Dr. Von Herzen, the minimum logic structure needed to interpolate pixels in this simple manner would be two registers to load and store the two pixel values to be interpolated and an adder whose output is wired to the output bus so as to shift the output down by one bit. He concludes that registers 804 and 806 and adder 856 or 858 suffices to perform the function.

Broadcom has not provided any declarations that support the conclusion that each of the twenty-two elements of the complex pixel interpolator disclosed in Fig. 8A is "necessary" to perform the claimed function. The court could rely on and adopt the three element structure consisting of register 804 and 806 and either adder 856 or 858 proffered by Intel in Dr. Von Herzen's declaration as the corresponding disclosed structure that performs the simple function of developing "developing interpolated pixel values representing pixels in said video image which are interstitial to pixels in said video image that **[**48]** are represented by said pixel data." However, it would be inappropriate for the court to rely on one litigant's expert testimony without conducting an independent analysis. Thus, before relying on such extrinsic findings, a court should first closely examine the intrinsic record.

After examining the specification, the court declines to adopt Dr. Von Herzen's

recommended structure because that structure over-simplifies the structure of a general linear pixel interpolator. First, while the specification notes that the pixel interpolator can be used "for averaging pixel values in either the horizontal or vertical direction," the specification clearly states that the main function of the pixel interpolator is "spatially interpolating pixel values for a video image." Col. 31:40-44. If the structure were construed to yield a simplified device that only performs the simple function of averaging, as urged by Dr. Von Herzen, that structure would be incapable of performing the function of a basic linear pixel interpolator. The specification discloses the equation that is used for basic pixel interpolation. See Col. 25:55. This function is R = SF * (A-B) + B, where A is one pixel value, **[**49]** B is the second pixel value, and SF is a scale factor having fractional values between 0 and 1. R is the result of the pixel interpolation. When algebraically manipulated, this equation reads: R = SF * A + (1-SF) * B. See Col. 25:68. A pixel interpolator simply uses arithmetic logic components to perform the above function on inputted pixel values. The specification itself notes that "the combination of the subtractor 824, multiplier 825, and adders 856 and 858 is a linear interpolator." Col. 26:1-3. The two input pixel values may be provided to this **[*536]** series of components via input registers. Different scale factors can be provided to or preprogrammed into the multiplier. The court therefore concludes that the corresponding structure associated with the claimed function of "developing interpolated pixel values representing pixels in said video image which are interstitial to pixels in said video image that are represented by said pixel data" is subtractor 824, multiplier 825, adders 856 and 858, and two input registers, and equivalents of that structure. Each of these components are and were well-known in the art.

It should be noted that the plain language of the claim also requires **[**50]** that the structure associated with the pixel interpolating means respond or react to the input means and to the same control signal that, as per the previous element, is sent to the statistical decoding means. As stated above, the control signal itself is not a means-plus-function element. See O.I. Corp., 115 F.3d at 1581.

d. "Arithmetic data processing means, responsive to said control signal, for performing arithmetic operations on the digital data provided by said statistical decoding means and on the interpolated pixel values provided by said pixel interpolating means."

The parties dispute the construction of the phrase "arithmetic data processing means, responsive to said control signal, for performing arithmetic operations on the digital data provided by said statistical decoding means and on the interpolated pixel values provided by said pixel interpolating means." Both parties agree that this element is written in means-plus-function format and is thus subject to the requirements of § 112, P 6.

The parties agree that the function of the arithmetic data processing means is the phrase that follows the preposition "for" in the element: "for performing **[**51]** arithmetic operations on the digital data provided by said statistical decoding means and on the interpolated pixel values provided by said pixel interpolating means." The term "arithmetic operations" means addition, subtraction, division, and/or multiplication.

The parties again dispute what should be included in the corresponding structure for the function of the arithmetic data processing means as described above. Intel claims that the corresponding structure of the arithmetic data processing means is the arithmetic and logic circuitry (ALC) that is associated with the arithmetic logic unit in Figure 2, which is a "black box" labeled 414 in Figure 4A of the patent. Broadcom, however, asserts that the corresponding structure is found in Figure 4B, which reveals the detailed circuitry that makes up the ALC depicted in Figure 4A. Broadcom claims that the corresponding structure is every component that is depicted in Figure 4B, including an "unconventional [dual-mode] adder."

The purpose of allowing parties to claim in terms of means-plus-function is to allow

flexibility in claiming, so long as the patentee discloses some corresponding structure. If the court were to adopt Broadcom's **[**52]** claim that all of the elements in Figure 4B must be included, the claimed function would be narrowed from performing arithmetic operations on the two types of data that it receives as input to performing dual-mode 8-bit and 16-bit arithmetic operations. Such a construction would impermissibly incorporate unnecessary structure into the claimed function. See Micro Chem., 194 F.3d at 1258.

The court declines to accept Broadcom's argument that the inventors "chose not to disclose [conventional] adders in their patent because they did not contemplate using [such] adders in their invention." While it **[*537]** is true that the patent discloses an unconventional dual-mode adder, there is nothing in the specification that states that the function of the arithmetic data processing means could not be performed with a conventional adder. In fact, in one of its modes, the dual-mode adder functions as a conventional adder. As the specification states, "To switch between providing a conventional ADD and a dual-add-with-saturate operation, an unconventional adder is used by the ALC 414." The patent notes that conventional adders are included as elements within the unconventional adder **[**53]** that is disclosed in Figure 4B: "The adders 450 and 452 [in Figure 4B] used in this embodiment of the invention are conventional eight-bit two's complement adders." Col. 14-61-63.

The patent specification makes clear that conventional adders were well-known in the art when the 201 patent was filed. For example, the patent states: "Conventional 16-bit arithmetic and logic circuitry would include a 16-bit adder capable of summing 16-bit two's complement numbers and a carry-in signal to produce a 16-bit two's complement output value and a carry-out signal." Col. 14:44-48. The patent specification also states that "the ALC used in this embodiment of the invention is exemplary. One skilled in the art of digital logic design may design and build alternative circuitry capable of performing equivalent operations to those described above." Col. 17:15-19.

The conventional adders 450 and 452 disclosed in Figure 4B can each independently perform arithmetic operations on the digital data provided by the statistical decoding means and on interpolated pixel values provided by the pixel interpolating means. The specification and associated flow-charts confirm that arithmetic operations performed **[**54]** on the "digital data provided by said statistical decoding means" may use conventional adders to add statistically decoded data to other values. See Col. 59:31-44. Arithmetic operations performed on the "interpolated pixel values" may also use conventional adders, independently operating to add interpolated pixel values to other values. See Col. 56:38-50; col. 58:16-29. The additional elements disclosed in Figure 4B relate either to (i) added functionality to perform an addition function called "saturation" on the results of addition (e.g., gates 462, 464, 466, 468, 470, 472, 474, and 476), see col. 14:20-39; or (ii) additional functionality that allows for dual-mode functionality (e.g., split logic 454 and 456), see id. Neither of these functions are part of the required function of the arithmetic data processing means as claimed in claim 1 of the 201 patent. Accordingly, the court finds that the corresponding structure for the arithmetic data processing means is adder 450 or adder 452 as illustrated in Figure 4B and their structural equivalents.

It should again be noted that the claim also requires that the structure associated with the arithmetic data processing **[**55]** means respond or react to the control signal.

e. "Output means, coupled to said arithmetic data output means, processing means for providing processed video data from said arithmetic data processing means as an output signal; and"

The parties dispute the construction of the phrase "output means, coupled to said arithmetic data output means, processing means for providing processed video data from

said arithmetic data processing means as an output signal." Both parties agree that this element is written in means-plus-function format and is thus subject to the requirements of § 112, P 6. The parties also agree that the claimed function of the output is "providing processed **[*538]** video data from [the] arithmetic data output means as an output signal."

In what has become a recurring theme, the parties again dispute the corresponding structure that performs the output means' claimed function. Intel claims that the corresponding structure is either the A BUS or the B BUS, as shown in Figure 2 of the specification, or both and the structural equivalents of each. Broadcom argues that the only corresponding structures identified in the specification that perform the claimed function are **[**56]** the output FIFO 236 and the VRAM control unit 238, both of which are shown in Figure 2. Broadcom identifies Figure 12A for the specific structure of the output FIFO 236. Broadcom identifies Figures 13A and 13B registers 1338 and 1342, control circuitry 1310, multiplexes 1356, and VRAM signal generator as the specific structure of the VRAM control circuit 238. All of the parties' proposed corresponding structures are shown in Figure 2 to be part of the on-chip video processor circuitry 210.

In support of its proffered construction of the corresponding structure, Intel first notes that Figure 2 shows that the A BUS or the B BUS pass data off-chip and provide an output signal that includes the results of the arithmetic data processing means. Intel also argues that Figure 4A shows the same thing. In Figure 4A the output of ALC 414 is provided to an output register 416 and then to a demultiplexer 418, from which the outputs are the A BUS and B BUS. The associated text in the specification explains that "the result obtained by performing any of the operations shown in Table 3 is stored in the output register 416. This register may be coupled to one or both of the busses A BUS and B BUS **[**57]** by the demultiplexing circuitry 418. . . ." Col. 17:9-14. Intel argues that Figures 2 and 4A support is construction that the "processed video data" output by the arithmetic processing means is placed in the A BUS, B BUS, or both.

To determine which of the proposed constructions is correct, the court turns to the specification. The section of the specification that introduces each of the components referred to above states:

> Data is provided by the circuitry 210 to the VRAM 216 via the output FIFO circuitry 236. The data values provided by the statistical decoder 230 and the input FIFO's 232 and 234 are applied to data path circuitry 242, an arithmetic and logic unit (ALU) 244 and a data RAM 228 via a bidirectional data bus B BUS. The bus B BUS is also used to provide address values to the VRAM control unit 238. A second bidirectional bus, A BUS is included in circuitry 201 to provide an alternate means for passing data values among the data path circuitry 242, ALU 244, and data RAM 228, and to provide data to and accept data from a pixel interpolator 246. In addition to the coupling set forth above, the data bus A BUS is connected to a microcode RAM and **[**58]** sequencer 226 and may be coupled to a microprocessor 224.

Col. 5:37-55 (emphasis added). The specification later elaborates on the output FIFO 236 in more detail stating that: "[the output FIFO 236] accept data in one or two bytes at a time from the pixel processing elements of the video signal processor 210, formats this data into 32-bit blocks and transfers these blocks to the VRAM 216." Col. 39:25-29. In describing the overall function of the video signal processor, the specification goes on to describe that after the arithmetic logic unit and pixel interpolator "expand the compressed video signals and generate pixel values that describe the encoded image[,] the generated pixel values are written into VRAM 216 via output FIFO 236 as a matrix having, for example, 240 rows **[*539]** and 256 columns . . . This matrix is hereinafter referred to

as a bit-map." Col. 5:65-6:4. This bit-map is then read from the VRAM by the display processor which reproduces the decoded image onto the television, computer monitor, or other display device. See col. 6:5.

It can be seen from the above language that the specification explicitly links the claimed function to the output FIFO. The specification **[**59]** does not, however, link the claimed function with either the A BUS or the B BUS. In fact, while the output FIFO provides arithmetically processed data as an output signal to the VRAM (via the DBUS), neither the A BUS or the B BUS provide this output signal to the VRAM in Figure 2. Therefore, the court finds that the output FIFO is the corresponding structure for the output means. With respect to the VRAM control unit, the court finds that the VRAM control unit is not implicated in the claimed function of "providing processed video data from said arithmetic data processing means as an output signal." In the exemplary embodiment described in the specification, a signal from the VRAM control unit generates signals that instruct the output FIFO when and where to apply its output data to the D BUS so that data is properly transferred to the VRAM. This data transfer occurs after the output FIFO "provides [the] processed video data . . . as an output signal." Moreover, the specification also notes that while in one operational mode of the exemplary output FIFO, data values are written to the VRAM using a given address value, the output FIFO also has a mode in which data values are written **[**60]** using successively increasing address values. Therefore, the VRAM control unit does not perform the claimed function of the "output means" and cannot be included as "necessary" corresponding structure.

With respect to the output FIFO, Intel argues that if the court decides that it is structure, the court should not incorporate all of the elements of Figure 12A as corresponding structure. Rather, Intel again urges the court to only determine which structural components are "necessary" to perform the claimed function. See Micro Chem., 194 F.3d at 1258. Intel argues that the specific multi-mode output FIFO described in Figure 12A, like the unconventional adder of Figure 4B contains numerous components that are unnecessary to perform the output means' function. Intel asserts that because output FIFOs were well-known in the art at the time of the 201 invention, see Von Herzen Decl. P 36, the proper corresponding structure is the general "black box" FIFO shown in Figure 2.

As the court has noted in other sections of this memorandum opinion, the law is clear that a "black box" may be used to describe structural elements that are well-known in the art and perform a **[**61]** common electronic function. S3 Inc., 259 F.3d at 1371. The most general structural representation of the "output means" output FIFO is a box in Figure 2 labeled output FIFO 236. FIFOs, as explained earlier, are memory buffers that are used to transfer data between different system components. Traditionally, such devices include stacks of registers and control circuitry that direct the input and output of the data that is stored in the registers. See, e.g., U.S. Pat. No. 4,151,609 ("First In First Out Memory," issued April 24, 1979). While the parties agree that Figure 12A and the associated text in the specification, which is labeled "circuitry suitable for use as the output FIFO 236," does not disclose a basic output FIFO, but instead describes a more sophisticated output FIFO that is capable of operating in different modes, see col. 39:53-43:64, Intel claims that not all of the circuit elements in this sophisticated output FIFO are necessary to perform the claimed function of the output means. After reviewing Figure 12A, the **[*540]** court agrees that the additional functionality provided by many of the elements within goes beyond providing the claimed function of **[**62]** the output means. Therefore, the court finds that the corresponding structure of the output means is a basic output FIFO and its equivalents, as represented by the block labeled FIFO 236 in Figure 2.

f. "Sequencing means for generating said control signal to condition said statistical decoding means, said arithmetic data processing means and said pixel interpolating means to operate simultaneously to produce decoded and decompressed pixel data as said output signal."

The parties dispute the meaning of the term "sequencing means for generating said control signal to condition said statistical decoding means, said arithmetic data processing means and said pixel interpolating means to operate simultaneously to produce decoded and decompressed pixel data as said output signal." Like the previous five claim elements, the parties agree that the sequencing means of claim 1 is written in means-plus-function format. The claimed function is the phrase that follows the preposition "for" in the claim element: "generating said control signal to condition said statistical decoding means, said arithmetic data processing means and said pixel interpolating means to operate simultaneously to produce **[**63]** decoded and decompressed pixel data as said output signal." The parties disagree as to other aspects of this claim element. First the parties dispute the meaning of the term "condition" as recited in the claimed function. Second, the parties dispute what is included as corresponding structure associated with the claimed function.

Intel argues that "to condition" means to assist or enable. In support of this definition, Intel states that the patent uses "conditioned" to mean "assisted" or "enabled" throughout the written description. See, e.g., col. 16:12-13 ("the ALC adder is conditioned to operate in its dual-add-with-saturate mode" by the microcontrol word [i.e., the control signal] issued by the microcontrol RAM and sequencer); col. 16:16-17 (the ALC adder may be "conditioned to operate as a conventional 16-bit two's compliment adder); col. 18:34-35 ("under the control of a microcode instruction, the gate 520 could be conditioned to join the busses A BUS and B BUS").

Broadcom, however, argues that term "to condition" means to instruct or set as a requirement. In support of this construction, Broadcom provides several dictionary definitions of the term "condition, **[**64]** " which state that the term means "to set as a condition or requirement" or "to adapt, modify, or mold to respond in a particular way" or "to set terms" or "to put into proper or the desired condition." See Webster's New World College Dictionary 290 (1996); The Merriam-Webster Dictionary 110 (1998); Webster's Third New Int'l Dictionary 473 (1993). Broadcom argues that Intel's proposed meaning of "to condition" as to assist or enable is inconsistent with the claim language and the specification's disclosure about the sequencer, which both state that the control signal generated by the sequencing means controls the components of the chip and that such components are responsive to the control signal. See Col. 6:66-7:6. Broadcom additionally asserts that the use of the term "condition" throughout the written description confirms its proposed meaning of the term. See, e.g., col. 8:61-63 ("During the instruction cycle T[0], the register MR0 is conditioned by the value of the signal A DST to store the 16-bit value MCO provided by the bus A BUS."); col. 26:62-64 ("The eight MSB positions of this 16-bit control value condition the pixel interpolator **[*541]** 246 to operate in its in-phase **[**65]** mode").

The court cannot find any support for Intel's argument that the term "to condition" means to enable or to assist. The court finds that the examples given by Intel regarding the use of the term "conditioned" in the specification do not necessarily support their proposed definition of the term because they are not inconsistent with the term's ordinary meaning. According to Merriam-Webster's Collegiate Dictionary, "conditioned" means "brought or put into a specified state." Merriam-Webster's Collegiate Dictionary, available at <http://www.m-w.com/cgi-bin/dictionary> (last visited Oct. 29, 2001). Nothing in the claims or specification indicates that the patentees meant the term condition to be defined as something other than this ordinary meaning.

In line with the dictionary excerpts provided by Broadcom, the court finds that the meaning of the term "to condition" in the 201 patent is to put into a specified state. The sequencer conditions the statistical decoding means, the arithmetic data processing means and the pixel interpolating means by use of a control signal. As stated above, the term "control signal" means an electronic signal used to control internal or external

[66]** devices or processes. See Col. 6:54 (equating the microcode control word that is the embodiment of the claimed control signal with "instructions"). As stated earlier, each of the above components is required by the claim language to be responsive to (i.e. each component must be able to respond or react to) this control signal such that when the control signal is received, the component is put into a specified state.

The second dispute between the parties on this claim element again concerns the structure that corresponds with "generating said control signal to condition said [circuit elements] to operate simultaneously to produce decoded and decompressed pixel data as said output signal." Intel argues that the corresponding structure is either (1) the on-chip microcode RAM and sequencer 226 shown in Figure 2 or (2) the off-chip (i.e. not within the video signal processing circuitry 210, which is indicated by a dotted line in Figure 2) microprocessor 224 shown in Figure 2. Broadcom, however, argues that while the microcode RAM and sequencer 226 corresponds to the function of the sequencing means, the corresponding structure must be all of the detailed circuitry of that component, **[**67]** as disclosed in Figure 3A, and not a black box labeled microcode RAM and sequencer. Broadcom also argues that microprocessor 224 cannot be an alternative structural embodiment of the sequencing means because it is off-chip.

The specification describes the microcode RAM and sequencer circuitry 226 as "the central control element in the video signal processing circuitry 210." It is clear from the specification that the microcode RAM and sequencer circuitry is the component that generates the control signal. Col. 6:44-54. Intel argues that there is no need to delve into the underlying circuitry of the black box microcode RAM and sequencer circuitry of Figure 2 because RAM-based sequencers were well known in the art at the time of the invention. See Von Herzen Decl. P 38 (citing several patents which show sequencers as black boxes and stating that "[a] broad variety of finite state machines . . . sufficient to generate control words for this type of application . . . have been in common use since at least the 1970's in integrated circuits"). While this might be true, the court finds it a more thorough approach to examine the most detailed disclosures for the corresponding structure **[**68]** that is necessary to perform the stated function. Where circuit diagrams are provided **[*542]** that describe "black box" elements those diagrams should be examined.

Figure 3A is "a block diagram showing circuitry suitable for use as the microcode RAM and sequencing circuitry of the video signal processing circuitry shown in FIG. 2." Col. 3:53-56. Broadcom asserts that all of components in Figure 3A are corresponding structure for the sequencing means. Intel, however, argues that the only elements of Figure 3A that are necessary to perform the recited function are the microcode RAM 310, instruction register 316, multiplexor 320, and a portion of the control block 308 that generates the LI and MXC signals. Von Herzen Decl. PP 39-40. This structure alone may perform the claimed function of a branching sequencer that can generate the control signal. In this arrangement, Dr. Von Herzen explains, instructions could be read out of a preprogrammed microcode RAM 310 into the instruction register 316. They would then be transmitted as the control word on the clock cycle following an active LI signal from the control block. The sequence of control words that would be sent to the instruction register **[**69]** could be conditionally changed (i.e. conditional branching operation) by the multiplexor 320, which could provide an alternative next instruction address to the control block. As an example, one can note that when microprocessor 224 assumes control over the microcode RAM and sequencer, it works in the manner similar to that described above by providing different control words directly to the instruction register 316 based on the clock cycle. In this case, after examining the specification, the court agrees with Dr. Von Herzen's proposed corresponding structure.

The specification describes the corresponding structure as follows: the microcode RAM 310 stores sets of control words (the control signal in this embodiment) in memory. These control words are sent to the instruction register 316, which, in response to a signal LI

generated by the control block 308 loads the control words to each of the components of the video signal processing circuitry 210. The multiplexor 320 provides an alternative next instruction address. The individual components of the circuitry 210 respond to the control signal provided by this structure to perform the decoding operation in a coordinated fashion. **[**70]** See Col. 6:40 - 7:7. Given that the other elements in Figure 3A are not necessary to perform the recited function, the court declines to include those elements in the corresponding structure of the sequencing means. Thus, the court finds that one corresponding structure for the sequencing means is the microcode RAM 310, instruction register 316, multiplexor 320, and a portion of the control block 308 that generates the LI and MXC signals, and that structure's equivalents.

The court also declines to negatively construe the corresponding structure of the sequencing means to exclude "state machines," devices that proceed through a predefined and fixed series of inputs and produce a predetermined set of outputs. It is undisputed that state machines were well-known in the art at the time of the filing of the 201 patent. In fact, the patent discloses the use of state machines for some of the functional elements inside the VRAM control unit. See Col. 50:10-15. Broadcom argues that the claimed sequencing means must be construed as excluding state machines distributed in each functional block (such as the statistical decoder, the pixel interpolator, and the ALU) that synchronize the **[**71]** operation of the functional blocks, because the patentees could have included them in the patent, but chose not to. It is clear from the intrinsic record and from the inventor's deposition that the use of state machines was never disavowed or disparaged. The inventor, David Sprague, quoted by Broadcom in its **[*543]** brief never said that a state machine would not work, but only that "we wanted . . . the capability of the chip to be programmable or reprogrammable." Because neither the patent nor the prosecution history said that state machines were incapable of performing the recited function, it is improper for this court to exclude state machines from the structure of the sequencing means during claim construction. See Micro Chem. Corp., 194 F.3d at 1255, 1260-61.

Intel also argues that the court should consider the off-chip microprocessor 224 as an alternative structure that performs the recited function. See Serrano v. Telular Corp., 111 F.3d 1578, 1583 (Fed. Cir. 1997) ("Disclosed structure includes that which is described in a patent specification, including any alternative structures identified"). The specification describes that by "using the signal **[**72]** HALT, the microprocessor 224 may effectively assume the control functions of the video signal processor 210." Col. 10:49-52; see also col. 10:53-67 (describing how microprocessor 224 controls the operation of the microcode RAM and sequencer circuitry). Both parties agree that microprocessor 224 is not implemented as part of the single integrated circuit 210; that is the microprocessor 224 is "off-chip."

Broadcom argues that, because the "video signal processor" recited in the preamble of claim 1 is the single chip integrated circuit that is labeled in Figure 2 as "video signal processing circuitry 201," the sequencing means must be part of the on-chip video signal processing circuitry. Because microprocessor 224 is off-chip and not part of the video signal processing circuitry 201, Broadcom submits that it may not be an alternative structure for the sequencing means. Broadcom also argues that microprocessor 224, under control of the HALT signal cannot be an alternative sequencing means structure because it does not perform the recited function of the sequencing means, but instead inhibits the clock signal that is ordinarily used for directing the timing and sequencing of issuing **[**73]** control signals out of the instruction register 316 of the microcode RAM and sequencer. See Col. 10:43-48 (HALT signal "effectively freezes the internal state of the entire video signal processor 210").

While the preamble of claim 10 states that the elements of that claim are contained on a single "integrated circuit," the preamble of claim 1 is not so limited. It states that claim 1 relates to a "video signal processor" that includes the elements discussed above. Nothing

in claim 1 requires the elements to be contained on a single chip. Therefore, if microprocessor 224 could independently perform the stated function of the sequencing means, the court would find it to be an alternative structure. There are two reasons why the court declines to include microprocessor 224 as an alternative structure. First, it does not perform the stated function of "generating said control signal to condition said [circuit elements] to operate simultaneously" Rather, its function, as described in the specification is "to cause the microcode RAM and sequencer circuitry 226 to write data into any register connected to the buses A BUS or B BUS or to load a bootstrap program as set forth **[**74]** above." Col. 10:64-68. This functionality seems to describe a debugging feature, which allows a user to load instructions to the microcode RAM and sequencer circuitry one instruction at a time. This is not the stated function of the sequencing means. Second, the microprocessor is not a stand-alone component that can replace the circuitry of the microcode RAM and sequencer as an alternative structure than can perform the function instead; rather, the microprocessor can work with the microcode RAM and sequencer circuitry.

[*544] 2. Construction of Claim 10

Claim 10 is directed to an integrated circuit for processing compressed video signals to provide decompressed video signals. The claimed integrated circuit includes an I/O port, an address output port, a statistical decoder, I/O circuitry, a pixel interpolator, an arithmetic processing means, a "selectively interconnecting" means, a control means, and an address generating means.

Specifically, claim 10 of the 201 patent recites:

> 10. An integrated circuit for processing compressed video signal, segments of which having been encoded using different encoding processes, to provide decompressed video signal representing moving **[**75]** images, said integrated circuit comprising:
>
> an I/O port for coupling said integrated circuit to memory means;
>
> an address output port for coupling address signals to said memory means;
>
> a statistical decoder coupled to said I/O port for decoding variable-length-encoded compressed video signals;
>
> I/O circuitry coupled to said I/O port, for providing processed video signal to said I/O port, and for accepting a processed video signal from said I/O port;
>
> a pixel interpolator for generating values representing pixels interstitial to pixel values represented by said processed video signal;
>
> arithmetic processing means responsive to control signals, for performing arithmetic and Boolean functions on binary values;
>
> means responsive to further control signals for selectively interconnecting said statistical decoder, said I/O circuitry, said pixel interpolator and said arithmetic processing means;
>
> control means for generating said control signals and said further control signals to selectively condition said arithmetic processing

means to perform one of a plurality of decoding algorithms on compressed video data provided at said I/O port; and

address generating **[**76]** means coupled to said address output port and responsive to at least said control means for generating memory address signals for said memory means.

Col. 61:45-62:33.

a. Preamble: "An integrated circuit for processing compressed video signal, segments of which having been encoded using different encoding processes, to provide decompressed video signal representing moving images, said integrated circuit comprising:"

Both parties agree that the preamble term "integrated circuit" means that the elements of claim 10 must be contained on a single chip. The court agrees. The ordinary meaning of "integrated circuit" is a device having a number of connected circuit elements fabricated on a single chip of semiconductor material. See Microsoft Computer Dictionary 238 (4th ed. 1999). This meaning is confirmed by the patent specification. See Col. 4:62-63 (video processing circuitry 210 is implemented as a single integrated circuit); Fig. 2 (dotted line around circuitry 210). Thus, claim 10 recites a single chip for processing a compressed video signal.

b. "An I/O port for coupling said integrated circuit to memory means"

The parties dispute the term "an I/O port **[**77]** for coupling said integrated circuit to memory means." The parties generally agree that an "I/O port" is an interface on the integrated circuit through which input and output data may be transferred to and from the memory means. **[*545]** The court agrees and adopts this construction of I/O port.

The meaning of the terms "for coupling" and "memory means" is disputed. Broadcom asserts that the "for coupling" language requires that the I/O port couples, or electronically connects, the video processor integrated circuit to memory means that is external to the video processor chip. Broadcom then argues that because the dual-ported video random access memory (labeled VRAM 216 in Figure 2) is the only component external to the video processor chip disclosed in the patent that stores video data for the video processor chip, the meaning of the claim term "memory means" must be limited to a dual-ported video random access memory. In support of this argument, Broadcom cites the Federal Circuit case, Wang Labs, Inc. v. America Online, Inc., 197 F.3d 1377, 1383 (Fed. Cir. 1999) for the proposition that if the only embodiment described in the specification is a particular protocol, then **[**78]** the claims are properly limited to that protocol. Wang Labs, Inc., 197 F.3d at 1383 (holding that term "frame" is limited to character-based frames and does not include bit-mapped frames).

The claim term "memory means" cannot be limited to the specific dual-mode VRAM that was used to describe the preferred embodiment, because the patentees did not claim "a dual mode VRAM." The patentee claimed a generic "memory means." It is undisputed that the term "memory means" is, and was at the time of the filing of the 201 patent, a term of art that is broadly defined as "memory or device where information can be stored and retrieved." Microsoft Computer Dictionary 285 (4th ed. 1999). Nothing in the specification compels a contrary or more limited construction. See Specialty Composites v. Cabot Corp., 845 F.2d 981, 987 (Fed. Cir. 1988) ("Where a specification does not require a limitation, that limitation should not be read from the specification into the claims").

In the Wang case cited by Broadcom, the issue for claim construction was whether the claim term "frames of information" covered both character-based and bit-mapped based protocols. The preferred **[**79]** embodiment was directed to character-based protocol

systems, although the specification acknowledged that bit-mapped protocols were part of the prior art. The Federal Circuit found that the term "frame" as used in the context of the patent necessarily was limited to character-based protocols stating that "the specification would not be so understood by a person skilled in the field of the invention" to include protocols that were not specifically included in the specification. The Federal Circuit also noted the significant impact of the prosecution history on its finding. The prosecution history of the patent at issue in Wang demonstrated that the patentee specifically distinguished the scope of the patent from prior art references relating to bit-map protocols. This confirmed the courts reading that claim's scope included only character-based protocols and not bit-map protocols.

The court reads the Wang case as standing for the proposition that patent claims should not be construed to cover embodiments that are not supported by the specification and are contradicted by the prosecution history. Wang is distinguishable from the instant case. In this case there is no such **[**80]** limiting prosecution history, nor does the specification compel the conclusion that the patented claims required a specific type of memory means.

Therefore, the court finds that the term "memory means" is to be accorded its ordinary meaning and defined as memory or device where information can be stored and retrieved. It is clear, however, from the claim language indicating that the I/O **[*546]** port is "for coupling said integrated circuit to memory means" that this "memory means" must not be contained as part of the single integrated chip, but is located off-chip. See also col. 45:3-6, 49-61 (referring to port as a location of a component for receiving data from, or sending data to, another component). If the memory means were on-chip, there would be no need to be able to couple it by using an I/O port.

With respect to the functional phrase "for coupling," the court finds that this phrase indicates only that the I/O port must be capable of being connected to an off-chip memory means and not that it is actually connected to such memory means. See, e.g., EcoLab, Inc. v. Envirochem, Inc., 264 F.3d 1358, 1366 (Fed. Cir. 2001) (functional language "for ware and hard surface **[**81]** washing" of the non-means-plus-function element "a three-dimensional, solid, cast, substantially uniform alkaline detergent for ware and hard surface washing required only that the recited detergent "be capable of 'ware and hard surface washing'").

c. "An address output port for coupling address signals to said memory means;"

The parties dispute the phrase "an address output port for coupling address signals to said memory means." The parties generally agree that the "address output port" recited in this element is an interface on the integrated circuit through which an address signal is output. See Microsoft Computer Dictionary 325, 349 (4th ed. 1999). This definition is also supported by the specification. See col. 50:62-65; Figure 13A (multiplexor 1356 of VRAM control unit issues address signals to the address/control bus labeled "AD/CT"). The court agrees and adopts this construction of address output port. More specifically, an "address signal" is a signal that specifies a location in memory in which data can be stored or from which data can be retrieved. See Microsoft Computer Dictionary at 17.

The parties again dispute the terms "for coupling" and "memory **[**82]** means." The court adopts its construction of those terms from its findings the preceding section. This construction is summarized in the following sentences. The term "memory means" means memory or device where information can be stored and retrieved. As per the claim language, the "memory means" must be contained off-chip. If it were not off-chip, there would be no need to couple it to the chip. With respect to the functional phrase "for coupling," the court finds that this phrase indicates only that the address output port must be capable of being connected to an off-chip memory means and not that it is actually connected to such memory means.

d. "A statistical decoder coupled to said I/O port for decoding variable-length-encoded compressed video signals;

With respect to the next 3 elements of claim 10, the parties dispute whether they are written in means-plus-function format such that they invoke the requirements of § 112, P 6. Specifically the parties dispute the meaning of the following three claim elements:

. "a statistical decoder coupled to said I/O port for decoding variable-length-encoded compressed video signals"

. "I/O circuitry coupled to said I/O **[**83]** port, for providing processed video signal to said I/O port, and for accepting a processed video signal from said I/O port"

. "a pixel interpolator for generating values representing pixels interstitial to pixel values represented by said processed video signal" **[*547]**

Because the parties argue whether each of these claims are claimed in mean-plus-function format, the court will address that threshold issue before turning to the construction of the claim language for each of the three elements.

Broadcom argues that the elements "statistical decoder," "I/O circuitry," and "pixel interpolator" are means-plus-function elements, which must be construed according to § 112, P 6. Despite acknowledging that these elements do not contain the word "means," Broadcom nevertheless argues that these claim elements must be construed as means-plus-function elements because each of the elements simply recites a function but fails to recite any definite structure. See MAS Hamilton Group v. LaGard, Inc., 156 F.3d 1206, 1213 (Fed. Cir. 1998) (the phrase "lever moving element for moving the lever" is a means-plus-function element governed by 112, P 6); C.R. Bard v. United States Surgical Corp., 102 F. Supp. 2d. 199, 215-16 (D. Del. 2000) **[**84]** (the phrase "surface of said hollow plug . . . being extremely pliable, allowing localized portions of the hollow plug to adapt to irregularities" is a means-plus-function element governed by 112, P 6). According to the cases cited by Broadcom, when it is apparent that an element invokes purely functional terms without the additional recital of a specific structure for performing the function, the claim element may be a means-plus-function element despite the lack of express means-plus-function language. Broadcom argues that this is the case with respect to the three elements at issue here.

Intel argues that these elements are not means-plus-function elements. Intel first points out that when the term "means" is not used in a claim element, a presumption arises that 112, P 6 does not apply. See Personalized Media Comm. LLC v. Int'l Trade Comm'n, 161 F.3d 696, 703-04 (Fed. Cir. 1998); see also Al-Site Corp. v. VSI Int'l Inc., 174 F.3d 1308, 1318 (Fed. Cir. 1999) ("When an element of a claim does not use the term 'means,' treatment as a means-plus-function claim element is generally not appropriate."); Greenberg v. Ethicon Endo-Surgery, Inc., 91 F.3d 1580, 1584 (Fed. Cir. 1996) **[**85]** ("The use of the term 'means' has come to be so closely associated with 'means-plus-function' claiming that it is fair to say that the use of the term 'means' . . . generally invokes 112(6) and that the use of a different formulation generally does not").

Intel next argues that the functional language used in the claims does not equate to means-plus-function. See Greenberg, 91 F.3d at 1583 ("The fact that a particular mechanism . . . is defined in functional terms is not sufficient to convert a claim element containing that term into a 'means for performing a specified function' within the meaning of 112(6)"). Rather, because each of the three terms at issue "has a reasonably well understood meaning in the art" as the name for a structure, 112, P 6 should not apply.

Id.; see also Personalized Media, 161 F.3d at 705 (holding that "detector" is a sufficiently definite structural term to preclude the application of 112, P 6, even though the detector was defined in terms of its function, because the term "detector" refers to a well-known structure for those knowledgeable in the art). Last, Intel contends that when a claim recites "means" language for **[**86]** some elements, but not others, the drafters presumably knew the difference and deliberately drafted the claim to reflect their intention that some elements should be construed as means-plus-function but that others should not be construed as means-plus-function.

As stated above, there is a rebuttable presumption in patent law that when a claim drafter fails to use "means" in a claim element that the claim element is not **[*548]** a means-plus-function element. See Personalized Media, 161 F.3d at 703-04; Greenberg, 91 F.3d at 1580. That presumption may be overcome if the claim element only provides functional terms without the recitation of structure for performing that function.

In determining whether the claims language recites a structural term or merely recites functional terms, the court should read the claim language in light of both the specification and prosecution history. See C.R. Bard, 102 F. Supp. 2d at 216 (stating that review of prosecution history demonstrates that the examiner would not have allowed the claim but for examiners finding that claim limitation at issue was a "means" element). Moreover, a court should examine whether **[**87]** the claim element at issue has a well-understood structural meaning in the art. See MAS Hamilton Group, 156 F.3d at 1213 (holding that district court correctly held that "movable link member for holding the lever . . ." was a means-plus-function element because there was no evidence that a "movable link member" had a well-understood structural meaning in the art). In this case, the court finds no reason to overcome the presumption that the three elements at issue are not means-plus-function elements. First, it is undisputed that the terms "statistical decoder," "I/O circuitry," and "pixel interpolator" had reasonably well-known structural meanings to persons skilled in the art at the time of the 201 invention was filed. Von Herzen Decl. PP 11-27. Second, there is nothing in the specification or prosecution history that precludes these three terms from being defined by referring to their well-known general structures. Therefore, the claim elements convey sufficient structure such that they are not defined purely in terms of their stated function.

Additionally, it should be noted that the claim drafters here used both means-plus-function language and non-means-plus-function **[**88]** language in the claims. Claim 1 recites "statistical decoding means," while claim 10 recites "statistical decoder." Claim 1 recites "input means" and "output means," while claim 10 recites "I/O circuitry." Claim 1 recites "pixel interpolating means," while claim 10 recites "pixel interpolator." In such instances, where there are no reasons for construing the latter terms as means-plus-function elements, a court should give effect to the intentional language used by the claim drafter.

The court finds that the "statistical decoder," "I/O circuitry," and "pixel interpolator" of claim 10 are not means-plus-function elements. Therefore, the court has no need to construe the function or the corresponding structure disclosed in the specification. The task for the court is merely to define those terms using ordinary claim construction rules.

The next claim term at issue is "a statistical decoder coupled to said I/O port for decoding variable-length-encoded compressed video signals." The term "statistical decoder" means a device that takes as input variable-length-encoded data and reverses the encoding process to provide decoded data as output. As stated previously, the term "coupled" means **[**89]** electronically connected, either directly or indirectly. The "said I/O port" refers to the "I/O port" that has been construed above in section II.B.2.b.

e. "I/O circuitry coupled to said I/O port, for providing processed video signal to said I/O port, and for accepting a processed video signal from said I/O port;

The parties dispute the meaning of the phrase "I/O circuitry coupled to said I/O port, for providing processed video signal to said I/O port, and for accepting a processed video signal from said I/O port." **[*549]** As stated in the preceding section, the court finds that this claim element is not a means-plus-function element. The term "I/O circuitry" means circuitry that inputs and outputs data. Examples of such circuitry are the input and output FIFOs in Figure 2. The remainder of the disputed terms have already been construed.

f. "A pixel interpolator for generating values representing pixels interstitial to pixel values represented by said processed video signal;"

The parties dispute the meaning of the phrase "a pixel interpolator for generating values representing pixels interstitial to pixel values represented by said processed video signal." As stated above in section **[**90]** II.B.2.d., the court finds that this claim element is not a means-plus-function element. The term "pixel interpolator" means a device that calculates spatially interpolated pixel values, from the pixel values of a previous image, which approximate the values of fractionally offset pixels between pixels. See col. 22:64-23:13; col. 25:36-41. As noted above, the term "interstitial" is defined as relating to or situated within the space between things closely set. See Webster's Third New Int'l Dictionary 1183 (Unabridged ed. 1986); see also Fig. 9A (illustrating interstitial pixels).

g. "Arithmetic processing means responsive to control signals, for performing arithmetic and Boolean functions on binary values;"

The parties dispute the meaning of the phrase "arithmetic processing means responsive to control signals, for performing arithmetic and Boolean functions on binary values." Unlike the preceding three claim elements, the parties agree that this element is claimed in means-plus-function format. The court finds that the function of this claim element is "performing arithmetic and Boolean functions on binary values." "Arithmetic functions" are one or more of the operations **[**91]** of addition, subtraction, division, or multiplication. "Boolean functions" are one or more of the logical operations that can be performed on binary data such as AND, OR, NOT, or XOR. See Col. 13:Table 3. "Binary values" are data represented by 1s and 0s. Thus, the function of the "arithmetic processing means" is to perform operations which include both arithmetic functions (e.g., additional or subtraction) and boolean (e.g., AND or NOT) functions on data values represented by 1s and 0s.

The parties again dispute the corresponding structure for this claim element. Taking the same position with respect to this element as to the "arithmetic processing means" of claim 1, Intel argues that the corresponding structure of the claim 10 "arithmetic processing means" is the arithmetic and logic circuitry 414 depicted in Figure 4A. Broadcom, mirroring its position with respect to claim 1, argues that the corresponding structure of the "arithmetic processing means" is every element of the very detailed circuit diagram in Figure 4B. They claim that the corresponding structure must be limited to the unconventional dual-mode adder described in that figure. As the court stated when addressing **[**92]** this argument in the context of claim 1 in section II.B.1.d., the elements that are not "necessary" to perform the claimed function, including the elements for performing the split-mode add-and-saturate function, will not be included in the corresponding structure.

In claim 1, the court found that performing "arithmetic operations" does not require the performance of both addition and subtraction. Rather, the court agreed with Intel that a structure that performs only successive addition operations, for example, satisfies the function of performing **[*550]** arithmetic operations. However, the court cannot simply apply its construction of the necessary corresponding structure of the arithmetic processing means of claim 1 to the arithmetic processing means of claim 10 because the

two claim elements recite different functions. The function of the claim 1 arithmetic processing means is to perform arithmetic operations; however, the function of the claim 10 arithmetic processing means is to perform arithmetic operations and boolean functions. To satisfy the function of performing boolean functions a structure must be able to perform at least one of the boolean operations, such as the AND operation, **[**93]** for example. Therefore, the court finds that the corresponding structure of the claim 10 arithmetic processing means must include, in addition to the corresponding structure of the claim 1 arithmetic processing means, one or more of the Boolean logic gates (such as OR, NOR, XOR, AND, or NOT) depicted in Figure 4B. See Col. 13: Table 3 (displaying possible combinations of arithmetic and logical functions that ALC 414 could be instructed to perform); Col. 13:31-43 ("The ALC 414 performs various arithmetic and logic operations on the values held in the register 410 and 412. . . the value held in bits 38-44 determine the function performed by the ALU according to Table 3"). This construction is further supported by claim language in the "control means" element, construed infra in section II.B.2.i., which states that the control means conditions the arithmetic processing means "to perform one of a plurality of decoding algorithms." If the arithmetic processing means of claim 10 needs a control means to condition it to perform a "plurality" of functions it must have the capability of performing a set of functions. This can be satisfied by a structure that can perform at least **[**94]** one arithmetic function and at least one logical function.

As noted above, the claim language also requires the arithmetic processing means to be responsive to control signals that instruct the arithmetic processing means as to which function or sequence of functions it is to perform. See id. Broadcom seems to argue that this control signal is limited to the exemplary "48-bit microcode control word" used in the patent. The court finds that this is not the case. See Electro Med. Sys., S.A. v. Cooper Life Sciences, Inc., 34 F.3d 1048, 1054 (Fed. Cir. 1994) ("particular embodiments appearing in a specification will not be read into the claims when the claim language is broader than such embodiments").

h. "Means responsive to further control signals for selectively interconnecting said statistical decoder, said I/O circuitry, said pixel interpolator and said arithmetic processing means".

The parties dispute the meaning of the claim term "means responsive to further control signals for selectively interconnecting said statistical decoder, said I/O circuitry, said pixel interpolator and said arithmetic processing means." While agreeing that this claim element **[**95]** is written in means-plus-function format, the parties disagree as to the details of the stated function and the scope of the corresponding structure.

The function associated with the "means responsive to further control signals" is "selectively interconnecting said statistical decoder, said I/O circuitry, said pixel interpolator and said arithmetic processing means." Intel argues that the term "selectively interconnecting" refers to the ability to electronically connect and disconnect any of the recited elements (i.e., statistical decoder, I/O circuitry, pixel interpolator, and arithmetic processing means) to and from the other elements. Broadcom **[*551]** asserts that the term "selectively interconnecting" refers to the ability to electronically connect and disconnect any of the recited elements *to each other*. While this dispute might be semantic, the court will construe the function for the sake of clarity.

Intel, in its brief, states that the ordinary meaning of the term "interconnect" is "to connect mutually or with one another." Webster's Third New Int'l Dictionary 1177 (Unabridged ed. 1986). The court finds that applying this meaning to the claim element supports Broadcom's contention **[**96]** regarding the function of this element. The claim recites that the function is to interconnect (i.e. to connect mutually) the statistical decoder, the I/O circuitry, the pixel interpolator, and the arithmetic processing means. Therefore, the applying Intel's proposed definition to the claim language itself reveals that

the recited function is to connect the four stated elements to each other and not merely to connect those four elements to other elements on the chip. This meaning is supported by the specification as well. As shown in Figure 2, the four recited elements are not all connected to each other. For example, the only data bus to which the pixel interpolator is connected is the A BUS. The statistical decoder and I/O circuitry on the other hand, are not connected to the A BUS, but instead are connected to data buses B BUS and D BUS. Since the specification describes how each of these chip components works together to decode data, it makes sense that the function of the claimed means is to provide a structure that "selectively interconnects" these components to each other by coupling the A BUS and B BUS. E.g., Col. 18:18-24.

The parties also disagree as to the corresponding **[**97]** structure of this element. The parties agree that one corresponding structure is the register file 510 contained within the device labeled Data Path 242 in Figure 2. Figure 5 shows a more detailed schematic of the Data Path circuitry from Figure 2 that includes the register file 510.

As shown in Figure 5 and explained in the specification, the register file 510, which includes four general purpose registers (R0, R1, R2, and R3), is connected to both the A BUS and the B BUS. See Col. 17:34-38. Thus the Data Path can receive data from components that are connected to either of these busses. The specification explains that the Data Path "selectively interconnects" these components See Col. 17:32-18:38. In light of Figure 5, the court finds that the components in the Data Path that can perform this function are any one of the general purpose registers of the register file 510 or the bus gate 520. See Col.18:30-38 ("it is contemplated that the bus gate 520 may, alternatively, be controlled by a bit in the microcode control word . . . [to] join the busses A BUS and B BUS . . ."). These components are, therefore, corresponding structures of the selectively interconnecting **[**98]** means.

Intel also argues that there are other components outside the circuitry within the data path that may be the corresponding structure. See Serrano, 111 F.3d at 1583 ("disclosed structure includes that which is described in a patent specification, including any alternative structures identified"). In particular Intel argues that the following may also be corresponding structure: (1) input registers contained in the statistical decoder, pixel interpolator, and ALU; or (2) the register files DR0, DR1, DR2, DR3 contained in the data RAM 228, shown in Figure 6. Broadcom asserts that neither the input registers of the individual components or the register files of the data RAM are corresponding structure because the specification does not identify either of these potentially alternative **[*552]** structures as ones that perform, or are able to perform, the claimed function.

The court will first address the proposed alternative structure of the input registers of the individual components. According to the specification, the A BUS and B BUS are both bidirectional busses. Each of the various components are coupled to these busses via their registers. See Fig. 10A (statistical **[**99]** decoder); Fig. 11A & col. 35:13-16 (input FIFOs); Fig. 12A, col 41:29-32 (output FIFOs); Fig. 4A & col. 13:25:3 (ALC). The specification further explains that in order to coordinate the bidirectional flow of data, each of the recited components of this claim element includes clock circuitry that enables and disables each element, thereby connecting and disconnecting each element from the data busses, and thus from the other elements. See Col. 12:1-26.

Upon reviewing the specification, the court finds that each recited component has an input register that is coupled to conventional circuits that interpret information contained in the control signal and thereby enable or disable the register. Id.; see, e.g., Fig., 10A (statistical decoder -- register 1010 or 1016); Fig. 8A (pixel interpolator -- register 802 or 812); Fig. 4A (ALU -- register 410 or 412). Broadcom argues that these registers cannot perform the stated function because they simply store data. The court disagrees. The specification, as stated above describes an alternative mechanism for "selectively interconnecting" the recited components that uses the storage capabilities of the input

registers and conventional **[**100]** decoding circuitry to perform this function. See Col. 12:1-26. The court therefore agrees with Intel that the input registers contained in the statistical decoder, pixel interpolator, and ALU comprise an alternative corresponding structure for the selectively interconnecting means.

Regarding the register files of the data RAM, the specification notes only that these register files are used for "temporary storage of data values." Col. 18:41-42. The court, therefore, finds that these register files are not an alternative corresponding structure, because the specification never links that structure to the claimed function of selectively interconnecting.

i. "Control means for generating said control signals and said further control signals to selectively condition said arithmetic processing means to perform one of a plurality of decoding algorithms on compressed video data provided at said I/O port; and"

The parties dispute the meaning of the phrase "control means for generating said control signals and said further control signals to selectively condition said arithmetic processing means to perform one of a plurality of decoding algorithms on compressed video data provided **[**101]** at said I/O port." The parties agree that this element is claimed in means-plus-function format and that the function of the claimed "control means" is "generating said control signals and said further control signals to selectively condition said arithmetic processing means to perform one of a plurality of decoding algorithms on compressed video data provided at said I/O port." As noted above, the term "control signal" means an electronic signal used to control internal or external devices or processes. The term "condition," as used in connection with the "control means" and as construed above means "to put into a specified state." Thus, to put it simply, the control signal contains instructions that are read by the arithmetic processing means. The arithmetic processing means responds to these instructions by performing the specified **[*553]** type of decoding called for in the control signal.

This function is described in detail by the specification. In the disclosed embodiment, areas of video image to be reconstructed by the video processor circuitry 201 are encoded, or compressed, into records called "cells" in terms of either absolute (intra-coding) or relative (inter-coding) bilinear **[**102]** polynomials (Ax + By + C), or as individually encoded pixels using a third encoding technique called "DPCM." Col. 51:62-52:9; see generally Col. 1:1-2:54. Under control of the sequencing circuitry 226, the compressed video data is applied to the arithmetic processing means and the pixel interpolator to expand the compressed video data and generate pixel values that describe the encoded image. Col. 5:61-67. As part of that process, the sequencing circuitry 226 sends control signals to the arithmetic processing means (ALU 414) to instruct that component to convert the compressed video data into bit-map pixel data by performing one of several decoding methods on the compressed video data that is provided at the data input/output port. Col. 6:66-7:6. The decoding operation can decode the absolute cells, relative cells, and DPCM cells. Col. 52:16-45.

Given this description, the parties agree that the corresponding structure to the control means is the microcode RAM and sequencer shown in Figure 2 as element 226. Col. 6:40-42 (microcode RAM and sequencer is central control element of video processing circuitry 201). The microcode RAM and sequencer 226 generates control signals and further **[**103]** control signals to selectively condition the arithmetic means to perform decoding algorithms on compressed video data. Col. 3:42-44; Col. 7:2-6.

However, Broadcom, as in its arguments about the sequencing means of claim 1, argues that the "black box" labeled microcode RAM and sequencer 226 is not sufficient structure, and instead urges the court to incorporate the detailed elements of that structure, as shown in Figure 3A. Intel, relying on its argument about the sequencing means of claim 1, responds that incorporating each and every element of Figure 3A would include

structure that is not "necessary" to perform the claimed function. The court has addressed this issue in its discussion of the sequencing means of claim 1 and applies its construction of the corresponding structure of that element in section II.B.1.f. to the "control means" at issue in this section.

j. "Address generating means coupled to said address output port and responsive to at least said control means for generating memory address signals for said memory means."

The parties dispute aspects of the meaning of the phrase "address generating means coupled to said address output port and responsive to at least **[**104]** said control means for generating memory address signals for said memory means." The parties agree that this element is drafted in means-plus-function format and that the function of the "address generating means" is "generating memory address signals for said memory means." However, the parties dispute both the meaning of the term "memory means" and the proper corresponding structure that performs this function.

In section II.B.2.a. the court construed the term "memory means" to mean "memory or device where information can be stored and retrieved." This construction applies to the term "said memory means" as used in this claim element.

The second dispute is what constitutes the corresponding structure for "generating memory address signal for said memory **[*554]** means." Intel identifies various on-chip registers (specifically:1) registers 1314 and 1318, 2) registers 1322 and 1326, 3) registers 1330 and 1334, or 4) registers 1338 and 1342, and structural equivalents of each of these register pairs) as the corresponding structure, while Broadcom argues that the only corresponding structure is the control circuitry 1310 and multiplexor 1356 of the VRAM control unit shown in Figure 13A and **[**105]** the structural equivalents of each. The key term in the recited function that the parties focus on in their dispute about the corresponding structure is the word "generating." Each party argues that the other's proffered construction is incapable of "generating."

Broadcom asserts that the on-chip registers do not generate address signals. Rather, Broadcom argues that these registers only *store* address values for the statistical decoder, input FIFOs, and output FIFO. According to Broadcom, the structure that actually generates the address signals sent to the VRAM is the control circuitry 1310 and multiplexor 1356 of Figure 13A. Broadcom argues that this circuitry together generates address signals that are outputted onto the AD/CTL (address/control) bus. The AD/CTL bus emanates from the multiplexor in Figure 13A and sends the address signals to the VRAM. Col. 50:62-65.

Intel, however, focuses on that section of the specification which notes that the values held in registers 1314 and 1318, for example, are concatenated to form a 22-bit address value, which is "applied to an input port, O, of a multiplexor 1356." Col. 45:3-6. Intel asserts that because the multiplexor 1356 *receives* **[**106]** memory address signals, it is not the structure that generates them. Similarly, Intel argues that, according to the specification, the control circuitry 1310 does not itself generate memory address signals, but rather controls "the circuitry which stores the various address values" and "is primarily responsible for controlling the loading of address values for the various devices." Col. 44:37-46.

The verb "to generate" means to "bring into existence" or "to define (as a mathematical or linguistic set or structure) by the application of one or more rules of operations to a given quantity." Webster's Third New Int'l Dictionary 945 (unabridged 1986). In light of that definition and after reviewing the sections of the specification that each party set forth in support of its position, the court finds that the specification supports a finding that Broadcom's proposed structure is correct. The registers listed by Intel do not

"generate" address signals. They store the address values of their respective components. While it is true that these stored address values are concatenated into a 22-bit address value, the registers' function is only to store the address values and not to intelligently **[**107]** compose the 22-bit address value.

One part of the structure that performs this function is the control circuitry 1310 (in Figure 13A) of the VRAM control unit displayed in Figure 2. The VRAM control unit is provided with VRAM address values via the B BUS. Col. 5:45-47. The specification states that "to store address values for [in this example] the input FIFO 232 multiplexors 1320 and 1324 are conditioned by a signal IFOM provided by the control circuitry 1310 to apply, respectively, the eight MSB's of an address value and the 14 LSB's of an address value to the input ports of registers 1322 and 1326, respectively." Col. 45:7-16. The specification goes on to describe that registers 1322 and 1326 load the values applied to their input ports in response to other signals generated by the control circuitry 1310.

[*555] The second part of the structure that performs the "address generating" function is the multiplexor 1356. The specification states that the concatenation of the 22-bit address values is completed when the values held in the registers are applied to the input ports of the multiplexor 1356. The address signal is then outputted to the VRAM, which is the "memory means" in this **[**108]** embodiment, by way of the AD/CTL bus. See Col. 50:62-65; Fig. 13A. Accordingly, the court finds that the corresponding structure of the address generating means is the control circuitry 1310 and the multiplexor 1356 and structural equivalents thereof.

III. CONCLUSION

The following table is intended to summarize, for the parties' convenience, the court's claim construction findings on the key disputed aspects of the claims.

Claim 1:	
input means for applying digital data representing a video image including compressed video data and pixel data, wherein a portion of said digital data is statistically encoded	The corresponding structure is the bus D BUS.
statistical decoding means, coupled to said input means and responsive to a control signal for decoding the statistically encoded digital data provided by said input means to generate decoded digital data	The term "control signal" means an electronic signal used to control internal or external devices or processes. The corresponding structure is the statistical decoding circuitry 1014, and structural equivalents.
pixel interpolating means, responsive to said control signal and	The corresponding structure is subtractor 824, multiplier 825,

to the pixel data provided by said input means for developing interpolated pixel values representing pixels in said video image which are interstitial to pixels in said video image that are represented by said pixel data	adders 856 and 858, and two input registers, and structural equivalents.
arithmetic data processing means, responsive to said control signal, for performing arithmetic operations on the digital data provided by said statistical decoding means and on the interpolated pixel values provided by said pixel interpolating means	The corresponding structure for the arithmetic data processing means is adder 450 or adder 452, and structural equivalents.
output means, coupled to said arithmetic data output means, processing means for providing processed video data from said arithmetic data processing means as an output signal	The corresponding structure for the output means is output FIFO 236, and structural equivalents.
sequencing means for generating said control signal to condition said statistical decoding means, said arithmetic data processing means and said pixel interpolating means to operate simultaneously to produce decoded and decompressed pixel data as said output signal.	The corresponding structure of the sequencing means is the microcode RAM 310, instruction register 316, multiplexor 320, and a portion of the control block 308 that generates the LI and MXC signals, and structural equivalents. The term "to condition" means to put into a specified state.
Claim 10.	
an I/O port for coupling said integrated circuit to memory means	The term "I/O port" means an interface on the integrated circuit through which input and output data may be transferred to and from the memory means. The term "memory means" means memory or device where information can be stored and retrieved. The patent language indicates that the memory means must be contained off-chip.

	The term "for coupling" means capable of being connected.
an address output port for coupling address signals to said memory means	The term "address signal" means a signal that specifies a location in memory in which data can be stored or from which data can be retrieved.
a statistical decoder coupled to said I/O port for decoding variable-length-encoded compressed video signals	This claim element is not a means-plus-function element. The term "statistical decoder" means a device that takes as input variable-length-encoded data and reverses the encoding process to provide decoded data as output.
I/O circuitry coupled to said I/O port, for providing processed video signal to said I/O port, and for accepting a processed video signal from said I/O port	This claim element is not a means-plus-function element. The term "I/O circuitry" means circuitry that inputs and outputs data.
a pixel interpolator for generating values representing pixels interstitial to pixel values represented by said processed video signal	This claim element is not a means-plus-function element. The term "pixel interpolator" means a device that calculates spatially interpolated pixel values, from the pixel values of a previous image, which approximate the values of fractionally offset pixels between pixels. The term "interstitial" is defined as relating to or situated within the space between things closely set.
arithmetic processing means responsive to control signals, for performing arithmetic and Boolean functions on binary values	The corresponding structure of arithmetic processing means of claim 10 is the corresponding structure of the claim 1 arithmetic processing means and one or more of the Boolean logic gates (such as OR, NOR, XOR, AND, or NOT) depicted in Figure 4B, and structural equivalents.

means responsive to further control signals for selectively interconnecting said statistical decoder, said I/O circuitry, said pixel interpolator and said arithmetic processing means	The corresponding structure of the means responsive to further control signals is either 1) any one of the general purpose registers of the register file 510 ;2) the bus gate 520; or 3) the input registers contained in the statistical decoder, pixel interpolator, and ALU, and structural equivalents.
control means for generating said control signals and said further control signals to selectively condition said arithmetic processing means to perform one of a plurality of decoding algorithms on compressed video data provided at said I/O port	The corresponding structure of the control means is the microcode RAM 310, instruction register 316, multiplexor 320, and a portion of the control block 308 that generates the LI and MXC signals, and structural equivalents.
address generating means coupled to said address output port and responsive to at least said control means for generating memory address signals for said memory means	The corresponding structure of the address generating means is the control circuitry 1310 and the multiplexor 1356, and structural equivalents.

[109]**

Source: All Sources > Area of Law - By Topic > Patent Law > Multi-Source Groups > **Patent Cases from Federal Courts and Administrative Materials**
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13871043
Basic Patent (No,Kind,Date): WO 9736466 A1 19971002 <No. of Patents: 008>
Patent Family:

Patent No	Kind	Date	Applic No	Kind	Date	
AU 9720701	A1	19971017	AU 9720701	A	19970307	
CN 1185892	A	19980624	CN 97190260	A	19970307	
EP 835600	A1	19980415	EP 97908909	A	19970307	
EP 835600	A4	20000112	EP 97908909	A	19970307	
IL 122107	A0	19980405	IL 122107	A	19970307	
JP 11506274	T2	19990602	JP 97534409	A	19970307	
US 5894410	A	19990413	US 959546	A	19971024	
WO 9736466	A1	19971002	WO 97US3511	A	19970307	(BASIC)

Priority Data (No,Kind,Date):
US 623355 A 19960328
WO 97US3511 W 19970307
US 959546 A 19971024
US 623355 A1 19960328

PATENT FAMILY:
AUSTRALIA (AU)
Patent (No,Kind,Date): AU 9720701 A1 19971017
PERIMETER MATRIX BALL GRID ARRAY CIRCUIT PACKAGE WITH A POPULATED CENTER (English)
Patent Assignee: INTEL CORP
Author (Inventor): BARROW MICHAEL
Priority (No,Kind,Date): US 623355 A 19960328; WO 97US3511 W 19970307
Applic (No,Kind,Date): AU 9720701 A 19970307
IPC: * H05K-007/06; H05K-007/02; H01L-023/48
Language of Document: English

CHINA (CN)
Patent (No,Kind,Date): CN 1185892 A 19980624
PERIMETER MATRIX BALL GRID ARRAY CIRCUIT PACKAGE WITH A POPULATED CENTER (English)
Patent Assignee: INTEL CORP (US)
Author (Inventor): BARROW M (US)
Priority (No,Kind,Date): US 623355 A 19960328
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IPC: * H05K-007/06; H05K-007/02; H01L-023/48
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EUROPEAN PATENT OFFICE (EP)
Patent (No,Kind,Date): EP 835600 A1 19980415
PERIMETER MATRIX BALL GRID ARRAY CIRCUIT PACKAGE WITH A POPULATED CENTER (English; French; German)
Patent Assignee: INTEL CORP (US)
Author (Inventor): BARROW MICHAEL (US)
Priority (No,Kind,Date): WO 97US3511 W 19970307; US 623355 A 19960328
Applic (No,Kind,Date): EP 97908909 A 19970307
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PERIMETER MATRIX BALL GRID ARRAY CIRCUIT PACKAGE WITH A POPULATED CENTER (English; French; German)
Patent Assignee: INTEL CORP (US)
Author (Inventor): BARROW MICHAEL (US)
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EP 835600	P	19960328	EP AA	PRIORITY (PATENT APPLICATION) (PRIORITAET (PATENTANMELDUNG)) US 623355 A 19960328
EP 835600	P	19970307	EP AA	PCT-APPLICATION (PCT-ANMELDUNG) WO 97US3511 W 19970307
EP 835600	P	19970307	EP AE	EP-APPLICATION (EUROPAEISCHE ANMELDUNG) EP 97908909 A 19970307
EP 835600	P	19980415	EP AK	DESIGNATED CONTRACTING STATES IN AN APPLICATION WITH SEARCH REPORT: (IN EINER ANMELDUNG BENANNTE VERTRAGSSTAATEN) DE FR GB IE IT
EP 835600	P	19980415	EP A1	PUBLICATION OF APPLICATION WITH SEARCH REPORT (VEROEFFENTLICHUNG DER ANMELDUNG MIT RECHERCHENBERICHT)
EP 835600	P	19980422	EP 17P	REQUEST FOR EXAMINATION FILED (PRUEFUNGSANTRAG GESTELLT) 980226
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EP 835600	P	20000112	EP RIC1	CLASSIFICATION (CORRECTION) (KLASSIFIKATION (KORR.)) 7H 05K 7/06 A, 7H 05K 7/02 B, 7H 01L 23/48 B, 7H 01L 23/31 B, 7H 01L 23/498 B

ISRAEL (IL)
Patent (No,Kind,Date): IL 122107 A0 19980405
PERIMETER MATRIX BALL GRID ARRAY CIRCUIT PACKAGE WITH A POPULATED CENTER (English)
Patent Assignee: INTEL CORP
Priority (No,Kind,Date): US 623355 A 19960328; WO 97US3511 W 19970307
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JAPAN (JP)
Patent (No,Kind,Date): JP 11506274 T2 19990602
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UNITED STATES OF AMERICA (US)
Patent (No,Kind,Date): US 5894410 A 19990413
PERIMETER MATRIX BALL GRID ARRAY CIRCUIT PACKAGE WITH A POPULATED CENTER (English)
Patent Assignee: INTEL CORP (US)
Author (Inventor): BARROW MICHAEL (US)
Priority (No,Kind,Date): US 959546 A 19971024; US 623355 A1 19960328
Applic (No,Kind,Date): US 959546 A 19971024
National Class: * 361760000; 361772000; 361777000; 361783000; 361820000; 257778000; 257724000; 257730000; 257780000
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UNITED STATES OF AMERICA (US)
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US 5894410 P 19960328 US AA PRIORITY
US 623355 A1 19960328
US 5894410 P 19971024 US AE APPLICATION DATA (PATENT)
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US 959546 A 19971024
US 5894410 P 19990413 US A PATENT
US 5894410 P 19991026 US CC CERTIFICATE OF CORRECTION

WORLD INTELLECTUAL PROPERTY ORGANIZATION, PCT (WO)
Patent (No,Kind,Date): WO 9736466 A1 19971002
PERIMETER MATRIX BALL GRID ARRAY CIRCUIT PACKAGE WITH A POPULATED CENTER (English)
Patent Assignee: INTEL CORP (US); BARROW MICHAEL (US)
Author (Inventor): BARROW MICHAEL (US)
Priority (No,Kind,Date): US 623355 A 19960328
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Designated States: (National) AL; AM; AT; AT; AU; AZ; BA; BB; BG; BR; BY; CA; CH; CN; CU; CZ; CZ; DE; DE; DK; DK; EE; EE; ES; FI; FI; GB; GE; GH; HU; IL; IS; JP; KE; KG; KP; KR; KZ; LC; LK; LR; LS; LT; LU; LV; MD; MG; MK; MN; MW; MX; NO; NZ; PL; PT; RO; RU; SD; SE; SG; SI; SK; SK; TJ; TM; TR; TT; UA; UG; US; UZ; VN; YU; AM; AZ; BY; KG; KZ; MD; RU; TJ; TM (Regional) GH; KE; LS; MW; SD; SZ; UG; AT; BE; CH; DE; DK; ES; FI; FR; GB; GR; IE
Filing Details: WO 100000 With international search report
IPC: * H05K-007/06; H05K-007/02; H01L-023/48
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WO 9736466 P 19960328 WO AA PRIORITY (PATENT)
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WO 9736466 P 19970307 WO AE APPLICATION DATA (APPL. DATA)

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WO 9736466 P 19971002 WO AK DESIGNATED STATES CITED IN A PUBLISHED APPLICATION WITH SEARCH REPORT (DESIGNATED STATES CITED IN A PUBLISHED APPL. WITH SEARCH REPORT)
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WO 9736466 P 19971002 WO A1 PUBLICATION OF THE INTERNATIONAL APPLICATION WITH THE INTERNATIONAL SEARCH REPORT (PUB. OF THE INTERNATIONAL APPL. WITH THE INTERNATIONAL SEARCH REPORT)

WO 9736466 P 19971128 WO ENP ENTRY INTO THE NATIONAL PHASE IN:
JP 97534409 A

WO 9736466 P 19971217 WO 121 EP: PCT APP. ART. 158 (1) (EP: PCT ANM. ART. 158 (1))

WO 9736466 P 19980730 DE 8642/REG WITHDRAWAL (ZURUECKNAHME)

WO 9736466 P 19981128 WO NENP NON-ENTRY INTO THE NATIONAL PHASE IN:
CA

*2000 ITC LEXIS 242, **

In the Matter of CERTAIN INTEGRATED REPEATERS, SWITCHES, TRANSCEIVERS, AND PRODUCTS CONTAINING SAME

Inv. No. 337-TA-435

2000 ITC LEXIS 242

UNITED STATES INTERNATIONAL TRADE COMMISSION

August 17, 2000

CORE TERMS: notice, importation, Tariff Act, administrative law, instituted, infringement, transceivers, integrated, repeaters, switches, Commission's Rules of Practice, cease and desist order, telephone

DETERMINATION:
[*1]

ACTION: INSTITUTION OF INVESTIGATION PURSUANT TO 19 U.S.C. § 1337.

INFORMATION:
SUMMARY: Notice is hereby given that a complaint was filed with the U.S. International Trade Commission on July 20, 2000, under section 337 of the Tariff Act of 1930, as amended, 19 U.S.C. § 1337, on behalf of Intel Corporation, 2200 Mission College Boulevard, Santa Clara, California 95052, and Level One Communications, Inc., 9750 Goethe Road, Sacramento, California 95827. The complaint alleges a violation of section 337 in the importation into the United States, the sale for importation, and the sale within the United States after importation of certain integrated repeaters, switches, transceivers, and products containing same by reason of infringement of claims 1, 3, 7-8, 13-19, and 23-29 of U.S. Letters Patent **5,894,410;** claims 1, 3, 10-13, 15-16, and 19 of U.S. Letters Patent 5,608,341; and claims 1, 3, 5, 10, and 11 of U.S. Letters Patent 5,726,860. The complaint further alleges that there exists an industry in the United States as required by subsection (a)(2) of section 337.

The complainants request that the Commission institute an investigation **[*2]** and, after a hearing, issue a permanent exclusion order and a permanent cease and desist order.

ADDRESSES: The complaint, except for any confidential information contained therein, is available for inspection during official business hours (8:45 a.m. to 5:15 p.m.) in the Office of the Secretary, U.S. International Trade Commission, 500 E Street, S.W., Room 112, Washington, D.C. 20436, telephone 202-205-2000. Hearing-impaired individuals are advised that information on this matter can be obtained by contacting the Commission's TDD terminal on 202-205-1810. Persons with mobility impairments who will need special assistance in gaining access to the Commission should contact the Office of the Secretary at 202-205-2000. General information concerning the Commission may be obtained by accessing its internet server (*http://www.usitc.gov*).

FOR FURTHER INFORMATION CONTACT: Juan Cockburn, Esq., Office of Unfair Import Investigations, U.S. International Trade Commission, telephone 202-205-2572.

AUTHORITY: The authority for institution of this investigation is contained in section 337 of the Tariff Act of 1930, as amended, and in section 210.10 of the Commission's Rules of Practice **[*3]** and Procedure, 19 C.F.R. § 210.10 (1999).

SCOPE OF INVESTIGATION: Having considered the complaint, the U.S. International Trade Commission, on August 16, 2000, ORDERED THAT--

(1) Pursuant to subsection (b) of section 337 of the Tariff Act of 1930, as amended, an investigation be instituted to determine whether there is a violation of subsection (a)(1)(B) of section 337 in the importation into the United States, the sale for importation, or the sale within the United States after importation of certain integrated repeaters, switches, transceivers, or products containing same by reason of infringement of claims 1, 3, 7-8, 13-19, or 23-29 of U.S. Letters Patent **5,894,410;** claims 1, 3, 10-13, 15-16, or 19 of U.S. Letters Patent 5,608,341; or claims 1, 3, 5, 10, or 11 of U.S. Letters Patent 5,726,860; and whether there exists an industry in the United States as required by subsection (a)(2) of section 337.

(2) For the purpose of the investigation so instituted, the following are hereby named as parties upon which this notice of investigation shall be served:

(a) The complainants are--

Intel Corporation

2200 Mission College Boulevard

Santa Clara, California 95052

Level One Communications, **[*4]** Inc.

9750 Goethe Road

Sacramento, California 95827

(b) The respondent is the following company alleged to be in violation of section 337, and is the party upon which the complaint is to be served:

Altima Communications, Inc.

2055 Gateway Place

San Jose, California 95110

(c) Juan Cockburn, Esq., Office of Unfair Import Investigations, U.S. International Trade Commission, 500 E Street, S.W., Room 401-Q, Washington, D.C. 20436, who shall be the Commission investigative attorney, party to this investigation;

(3) For the investigation so instituted, the Honorable Paul J. Luckern is designated as the presiding administrative law judge;

(4) The presiding administrative law judge is authorized to consolidate Inv. No. 337-TA-430 and this investigation if he deems it appropriate.

Responses to the complaint and the notice of investigation must be submitted by the named respondent in accordance with section 210.13 of the Commission's Rules of Practice and Procedure, 19 C.F.R. § 210.13. Pursuant to 19 C.F.R. §§ 201.16(d) and 210.13(a) of the Commission's Rules, such responses will be considered by the Commission if received not later than 20 days after the date of service by the Commission **[*5]** of the complaint and the notice of investigation. Extensions of time for submitting responses to the complaint will not be granted unless good cause therefor is shown.

Failure of the respondent to file a timely response to each allegation in the complaint and in this notice may be deemed to constitute a waiver of the right to appear and contest the allegations of the complaint and this notice, and to authorize the administrative law judge and the Commission, without further notice to the respondent, to find the facts to be as alleged in the complaint and this notice and to enter both an initial determination and a final determination containing such findings, and may result in the issuance of a limited exclusion order or a cease and desist order or both directed against such respondent.
#FPA1# #FPA2# #FPA3# #FPA4#

Source: All Sources > Area of Law - By Topic > Patent Law > Multi-Source Groups > **Patent Cases from Federal Courts and Administrative Materials**
Terms: **5,894,410 or 5894410** (Edit Search)
View: Full
Date/Time: Friday, February 8, 2002 - 10:19 AM EST

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*172 F. Supp. 2d 478, *; 2001 U.S. Dist. LEXIS 18422, **

INTEL CORPORATION, Plaintiff, v. BROADCOM CORPORATION, Defendant.

Civil Action No. 00-796-RRM

UNITED STATES DISTRICT COURT FOR THE DISTRICT OF DELAWARE

172 F. Supp. 2d 478; 2001 U.S. Dist. LEXIS 18422

November 6, 2001, Decided

PRIOR HISTORY: Intel Corp. v. Broadcom Corp., 2001 U.S. Dist. LEXIS 16506 (D. Del. Oct. 9, 2001).

DISPOSITION: Court construed 4,823,201 patent claims and 4,975,830 patent claims.

CASE SUMMARY

PROCEDURAL POSTURE: A Markman hearing was conducted in plaintiff patentee's patent infringement action against defendant corporation.

OVERVIEW: A patentee sued a corporation regarding five of its patents for computer technology. The corporation initially argued for dismissal or transfer of venue of the patentee's claims against it. Following denial of the corporation's motions, the court heard oral argument to construe the claims of the patentee's five patents prior to trial. The court focused on one of the patentee's patent claims concerning a communication system in which devices on the network could dynamically choose between multiple formats by which to transmit and receive data to and from one another over a common communication medium. The court construed the disputed claims in the patent, drawing on the claim construction hearing, the parties briefs, documents submitted by the parties, and the prosecution history of the patent.

OUTCOME: The disputed claims in one patent were construed.

CORE TERMS: node, format, destination, specification, patent, bit, network, medium, string, default, interface, supplemented, invention, coupled, frame, algorithm, plurality, inventor, software, circuitry, select, corresponding, means-plus-function, capability, architecture, protocol, cache, transmitted, comprised, compatible

CORE CONCEPTS - ◆ Hide Concepts

Patent Law : Specification & Claims : Applicant's Theory of Invention
See 35 U.S.C.S. § 112 P 2.

Patent Law : Infringement : Claim Interpretation

- Patent claim interpretation is an issue that lies exclusively within the province of the court. In interpreting patent claims, courts must focus primarily on intrinsic evidence of record, which is comprised of the claims themselves, the patent specification (also known as the written description), and the prosecution history of the patent. The intrinsic evidence is the most significant source of the legally operative meaning of disputed claim language.

Patent Law : Infringement : Claim Interpretation

- The starting point for any claim construction is the words of the claims themselves. The words of the claims are generally given their ordinary and accustomed meaning. In addition, descriptive claim terms that stand unmodified (such as a noun, where no limiting adjective is recited) should be given their full scope and should not be limited to a particular subset of the general term.

Patent Law : Infringement : Claim Interpretation

- Technical claim terms are generally interpreted as they ordinarily would be understood by those working in the field of the invention. However, a patentee may also choose to be his own lexicographer and use terms in a manner other than their ordinary meaning, as long as the special definition of the term is clearly stated in the patent specification or file history.

Patent Law : Infringement : Claim Interpretation

- If the claim language is clear on its face, the court reviews the specification and prosecution history only for the limited purpose of determining whether the patentees used terms in the claims in accordance with their ordinary meaning or whether they deviated from the clear meaning of the claim. Such deviation may occur if the patentees have chosen to use a term in a manner other than its ordinary meaning, where the claim terms lack clarity to the degree that it is impossible to ascertain the scope of the claim from the claim terms alone, or where the patentees have relinquished certain claim coverage during the prosecution of the patent by amending their claims or arguing to distinguish a prior art reference.

Patent Law : Infringement : Claim Interpretation

- Claims should be interpreted consistently with the specification, which provides context for the proper construction of claims because it explains the nature of the patentee's invention. However, when considering the patent specification to construe claim terms, the court must take care to avoid reading limitations appearing in the specification into the claims.

Patent Law : Infringement : Claim Interpretation

- Extrinsic evidence may always be consulted to assist in the understanding of the underlying technology. Otherwise its use should be limited to situations where the analysis of the intrinsic record leaves the claims unclear. If the proper interpretation of the claim is not clear from the intrinsic record, the court may rely on extrinsic evidence such as expert testimony, inventor testimony, technical treatises, or articles. Such extrinsic evidence may be used only to help the court come to the proper understanding of the claims; it may not be used to vary or contradict the claim language. Dictionaries, however, are a special form of extrinsic evidence that may be considered along with the intrinsic evidence in determining a claims ordinary meaning.

Patent Law : Specification & Claims : Claim Language

Patent Law : Infringement : Claim Interpretation

- Certain types of claims, which are drafted in functional terms, are treated specially for claim construction. When a patent claim contains so called "means-plus-function" elements, which recite a function to be performed, rather than a definite structure, material, or acts for performing that function, under 35 U.S.C.S. § 112, such elements are construed to cover the corresponding structure, material, or acts described in the specification and the equivalents thereof. 35 U.S.C.S. § 112. Therefore, in construing a mean-plus-function element, the court must identify both the claimed function and the structure, material, or acts necessary to carry out that function.

Patent Law : Specification & Claims : Claim Language

- Typically, the relevant function is recited in the claim after the prepositional link "for," which ties the means to the function. 35 U.S.C.S. § 112 does not permit limitation of a means-plus-function claim by adopting a function different from that explicitly recited in the claim. However, a court may also look to the specification in construing the function.

Patent Law : Specification & Claims : Claim Language

- The "means" term in a means- plus-function limitation is essentially a generic reference for the corresponding structure disclosed in the specification. A determination of corresponding structure, therefore, is a determination of the meaning of the "means" term in the claim and is thus also a matter of claim construction.

Patent Law : Infringement : Claim Interpretation

- Claim terms should be construed independent of the accused product, in light of the specification and the file history.

Patent Law : Infringement : Claim Interpretation

- While the claim language should be interpreted in a manner that is consistent with the specification, it is improper to import limitations from the specification onto the claims. Moreover, it is improper to add a limiting adjective or adverb before a term that stands unmodified in the claim.

Patent Law : Specification & Claims : Claim Language
Patent Law : Infringement : Claim Interpretation

- A "term of art" means that the claimed elements are essential, but other elements may be added and still form a construct within the scope of the claim.

Patent Law : Specification & Claims : Description Requirement
Patent Law : Infringement : Claim Interpretation

- While the descriptive part of the specification aids in ascertaining the scope and meaning of the claims inasmuch as the words of the claims must be based upon the description, what is claimed should not be restricted to the examples given in the specification. Where a specification does not require a limitation, that limitation should not be read from the specification into the claims.

Patent Law : Infringement : Claim Interpretation

- When the inventors explicitly state the meaning that they are assigning to certain claim terms, the court should give that meaning to those terms.

Patent Law : Infringement : Claim Interpretation

- In interpreting claims, it is improper for courts to read into an independent claim a limitation that is explicitly set forth in another claim. Rather, each claim of a patent constitutes a separate invention and gives rise to separate rights. This concept, known as claim differentiation states that claims should be presumed to cover different inventions.

Patent Law : Infringement : Claim Interpretation

- In interpreting a claim, the general rule is that the claims of a patent are not limited to the preferred embodiment, unless by their own language.

Patent Law : Specification & Claims : Claim Language
Patent Law : Infringement : Claim Interpretation
- Where a claim element is written in the means-plus-function language of 35 U.S.C.S. § 112, the court will construe the phrase to determine both the claimed function and the structure that is disclosed in the specification that corresponds to that function.

Patent Law : Specification & Claims : Claim Language
- When determining the claimed function in a means-plus-function element, the function is often simply found in the phrase that follows the word "for."

Patent Law : Specification & Claims : Claim Language
- 35 U.S.C.S. § 12, P 6, the statutory provision that sets forth the rules for means-plus-function claims, allows claim drafters to use means expressions without recitation of all the possible means that might be used in a claimed apparatus. However, the price that must be paid for use of that convenience is the limitation of the claim to the means specified in the written description and equivalents thereof.

Patent Law : Specification & Claims : Claim Language
- See 35 U.S.C.S. § 12, P 6.

Patent Law : Specification & Claims : Claim Language
Patent Law : Infringement : Claim Interpretation
- In interpreting 35 U.S.C.S. § 12, P 6, where the claim at issue is a process claim that recites a combination of steps (i.e., a step-plus-function claim) the claim covers corresponding functional "acts" that are recited in the patent. However, where the claim at issue is an apparatus claim that recites a combination of elements (i.e., a means-plus-function claim), the claim covers corresponding structure and material.

Patent Law : Infringement : Claim Interpretation
- According to the theory of claim differentiation, each claim is presumed to disclose a separate invention.

Patent Law : Specification & Claims : Claim Language
Patent Law : Infringement : Claim Interpretation
- Under 35 U.S.C.S. § 12, P 6, claim differentiation cannot be used to broaden a means-plus-function element beyond the structure in the specification, even if the dependent claim recites the same exact structure. Even if the structure contained in an independent claim is recited explicitly in a dependent claim, the two claims will have differing scope, because the independent claim literally covers the structure described in the specification and equivalents thereof, while the dependent claim does not literally cover equivalents. Rather, 35 U.S.C.S. § 12, P 6, instructs a court to review the specification and prosecution history to determine the claimed structure.

Patent Law : Specification & Claims : Claim Language
Patent Law : Infringement : Claim Interpretation
- In determining the associated structure of a means-plus-function claim, the court must read the specification as a whole.

Patent Law : Specification & Claims : Enablement Requirement
- 35 U.S.C.S. § 112, P 1 requires that the disclosure in the patent specification be sufficient such that one skilled in the art will know and understand how to make or use the invention.

Patent Law : Specification & Claims : Definiteness

- 35 U.S.C.S. § 112, P 2 requires claims that particularly and distinctly indicate the subject matter that the inventor regards as his or her claimed invention.

Patent Law : Specification & Claims : Claim Language

- 35 U.S.C.S. § 112, P 6, the means-plus-function provision, also focuses on claim language, but directs one to the patent specification for its meaning.

Patent Law : Specification & Claims : Definiteness

Patent Law : Specification & Claims : Enablement Requirement

- In order to determine whether an invention is properly enabled under 35 U.S.C.S. § 112, P 1 and particularly claimed under 35 U.S.C.S. § 112, P 2, one must view the disclosures taking into account whether one skilled in the art will know and understand what is claimed and how to make or use the invention.

Patent Law : Specification & Claims : Claim Language

- The proper inquiry under 35 U.S.C.S. § 112, P 6 asks first whether structure is described in the specification, and, if so, whether one skilled in the art would identify the structure from the description. Fulfillment of the 35 U.S.C.S. § 112 tradeoff cannot be satisfied when there is a total omission of structure. There must be structure in the specification. This conclusion is not inconsistent with the fact that the knowledge of one skilled in the particular art may be used to understand what structure(s) the specification discloses because such resources may only be employed in relation to structure that is disclosed in the specification. All that one needs to do in order to obtain the benefit of the means-plus-function claiming device is to recite some structure corresponding to the means in the specification, so that one can readily ascertain what the claim means.

Patent Law : Specification & Claims : Claim Language

- In a means-plus-function claim in which the disclosed structure is a computer, or microprocessor programmed to carry out an algorithm, the disclosed structure is not the general purpose computer, but rather the special purpose computer programmed to perform the disclosed algorithm.

Patent Law : Specification & Claims : Claim Language

Patent Law : Infringement : Claim Interpretation

- For the purpose of technically construing a corresponding structure under 35 U.S.C.S. § 112, P 6, before turning to the inquiry of whether those with ordinary skill in the art would identify the structure from the description, the first inquiry must be whether structure is described in the specification.

Patent Law : Infringement : Claim Interpretation

- The claims of a patent must be read as a whole. Claim terms must be interpreted consistently.

Patent Law : Specification & Claims : Claim Language

Patent Law : Infringement : Claim Interpretation

- See 35 U.S.C.S. § 112 P 4.

Patent Law : Specification & Claims : Claim Preambles

- Language in a claim preamble acts as a limitation only when such language serves to give meaning to a claim and properly define the invention, not when the preamble merely states a purpose or intended use of the invention.

COUNSEL: [1]** For plaintiff: J. Andrew Huffman, Esquire, Fish & Richardson P.C., Wilmington, Delaware.

For plaintiff: John E. Gartman, Esquire, Juanita Brooks, Esquire, Fish & Richardson P.C., San Diego, California.

For defendant: Richard H. Morse, Esquire, John W. Shaw, Esquire, Young Conaway Stargatt & Taylor, LLP, Wilmington, Delaware.

For defendant: Ron E. Shulman, Esquire, Michael A. Ladra, Esquire, Irwin R. Gross, Esquire, James C. Yoon, Esquire, Wilson Sonsini Goodrich & Rosati, Palo Alto, California.

For defendant: Raphael L. Lupo, Esquire, Vera Elson, Esquire, McDermott, Will & Emery, Washington DC.

JUDGES: McKELVIE, District Judge.

OPINIONBY: McKELVIE

OPINION: [*482] MEMORANDUM OPINION

Wilmington, Delaware
November 6, 2001

McKELVIE, District Judge

This is a patent case. Plaintiff Intel Corporation is a Delaware corporation with its principal place of business in Santa Clara, California. Intel owns U.S. Patent Nos. 4,823,201 (the 201 patent); 4,975,830 (the 830 patent); **5,894,410** (the 410 patent); 5,079,630 (the 630 patent); and 5,134,478 (the 478 patent). Defendant Broadcom Corporation is a California corporation with its principal place of business in Irvine, California. **[**2]**

On August 30, 2000, Intel filed its complaint in this case alleging that Broadcom is infringing, inducing infringement, or committing acts of contributory infringement of one or more claims of the 201 patent, the 830 patent, the 410 patent, the 630 patent, and the 478 patent.

On October 10, 2000, Broadcom moved to dismiss Intel's complaint or, in the alternative, to transfer the action to the United States District Court for the Northern District of California. After eleven months of discovery, the court heard oral argument on Broadcom's motion on September 24, 2001. In a memorandum opinion dated October 9, 2001, the court denied Broadcom's motion.

On September 24, 2001, the court also heard oral argument in accordance with Markman v. Westview Instruments, Inc., 517 U.S. 370, 134 L. Ed. 2d 577, 116 S. Ct. 1384 (1996), to construe the claims of the five patents. The claim construction issues for each of the five patents are now fully briefed by the parties.

In order to simplify the issues before the jury and to shorten the length of the jury trial, the court required that the trial proceed in two parts. The first trial will be a three week jury trial on the **[**3]** 201 and the 830 patents. A subsequent trial will cover the remaining three of the five patents.

This is the first of two memorandum opinions that will set forth the court's claim construction of asserted claims of the 201 and 830 patents. This opinion will consider the asserted claims of the 830 patent.

I. FACTUAL AND PROCEDURAL BACKGROUND

The court draws the following facts from the claim construction hearing, the parties briefs, documents submitted by the parties, **[*483]** and the prosecution history of the 830 patent.

A. The Patented Technology

The problem that the inventors of the 830 patent sought to solve was how to accommodate a constantly expanding computer network in which new higher performance devices that are continually added in order to provide more complex features must still be compatible with older devices on the network. The invention of the 830 patent was driven by the desire to allow these new devices to be introduced to the network, while still ensuring that the new devices would be compatible with older devices that remain connected to the network. Using the patented invention, all of the devices on the network are able to communicate with each **[**4]** other and any specific communication that is sent between devices will use the optimal data transmission methods.

The 830 patent involves a communication system, such as a computer network, in which devices on the network (called nodes) can dynamically choose between multiple formats (e.g. various transmission characteristics including transmission speeds, encoding protocols, compression protocols, and encryption protocols) by which to transmit and receive data to and from one another over a common communication medium. To send and receive data from each other, devices must use compatible transmission protocols. These protocols are special sets of rules that end points in a telecommunication connection use when they communicate. Two devices that use compatible transmission rules to transmit information to each other can be said to be speaking the same language. Using the invention, a device on the network that seeks to transmit information can dynamically determine all of the formats by which it can communicate with a device that it wishes to send information to; the optimal format that is supported by both devices is then selected and used to transmit information.

The following **[**5]** example seeks to illustrate how this invention can be used to solve the problem of keeping devices on an ever-expanding network interoperable. One easily understandable transmission characteristic that may be captured in a format is the rate at which data is transmitted. For example, assume that older devices on the network were limited to a format that supports a maximum transmission speed of 10 Mbps, while newer devices support both a lower speed of 10 Mbps and a maximum transmission speed of 100 Mbps. Using the invention, two 100 Mbps devices that wanted to exchange information could each determine that the other device was indeed a 100 Mbps device and determine to transmit or receive data using the 100 Mbps transmission speed. The invention also allows a 100 Mbps device that wants to transfer information to a 10 Mbps device to determine that the receiving device is a 10 Mbps device and accordingly to select the transmission speed that is supported by the receiving device.

The invention, as described by the patent, works as follows. Each device on the network includes in its memory a list of its own transfer formats and the transfer formats that are supported by every other device **[**6]** on the network. These format sets are represented in memory by strings of bits. When a device needs to transmit information to another device, it searches its memory for the supported format set of the destination device. If no format set is located for the device to which it wishes to send information, the transmitting device performs an inquiry dialog with the other device to learn and store the other devices supported format set. Then, using algorithms that are applied through circuitry and software, it selects the optimal format **[*484]** which is mutually compatible with itself and the destination device.

B. The Accused Devices

Intel has accused Broadcom's Ethernet products of infringing the 830 patent. Ethernet, which is specified in the Institute of Electrical and Electronics Engineers (IEEE) 802.3 standard for Ethernet Local Area Networks, is the most widely-installed local area network (LAN) technology. A LAN is a group of computers and associated devices that share a common communications line and typically share the resources of a single processor or server within a small geographic area.

An Ethernet LAN may use either (i) a pair of stations linked with a single cable, or **[**7]** (ii) multiple stations that are each connected by an individual cable to a connection, or "port," on an Ethernet repeater. See C. Spurgeon, Ethernet: the Definitive Guide 29 (2000). In the second case, by using the repeater, all the cables can operate together "as a single shared Ethernet channel." Id. at 33. Additionally, switching hubs, devices which can connect one or more Ethernet LANs, are often used to create more extended network systems. When a switch connects two Ethernet networks, "each port of a switching hub provides a connection to an Ethernet media system that functions as an entirely separate Ethernet LAN." Id. at 32-33. Switching hubs may also be used to connect individual local stations. In that configuration, each of the local stations is connected directly to a port in the switch by a dedicated Ethernet link. Id. at 33-34.

A key feature of Ethernet systems, for the purposes of this dispute, is the "auto-negotiation" feature. The auto-negotiation process allows Ethernet equipment to be automatically configured on power-up, relieving the installer of the new networked device of the need to determine the proper speed and configuration. Id. at 85. **[**8]** When a device is turned on, the auto-negotiation feature, if enabled, sets the correct speed and other features that will be used by a local device, such as a personal computer, and whatever device is connected to the other end of its cable segment for as long as the Ethernet LAN is powered up. Id. at 86. The device at the opposite end of the link from the local device is called a "link partner." Id. at 87. A computer's link partner is thus another computer, the port in a repeater, or the port in a switching hub, to which the computer is connected by a cable or "link segment." Id. It is the only device with which a local computer auto-negotiates. In sum, "auto-negotiation makes it possible for Ethernet stations to exchange information about their capabilities over a link segment. This, in turn, allows the stations to perform automatic configuration to achieve the best possible mode of operation over a link." Id. at 86.

C. Procedural History of the '830 Patent

The prosecution history of the 830 patent is short and straightforward. On December 5, 1988, the inventors filed the original application with the Patent and Trademark Office. As originally filed, the application **[**9]** was titled "Computer Communication System Having Supplemental Formats" and had forty-five claims. In response to the application, there was a single Office Action. In the Office Action, dated December 20, 1988, all of the claims (claims 1-45) were rejected under 35 U.S.C. § 112 n1 as being indefinite for failing **[*485]** to particularly point out and distinctly claim the subject matter of the invention.

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n1 ✦Section 112, paragraph 2 states: "The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention." 35 U.S.C. § 112 P 2.

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The Examiner's rejection under § 112 related to three concerns. First, many of the claims recited that particular elements were "adapted to" do something, and the Examiner felt

that this phrase was indefinite. Second, a number of terms within the claims lacked a proper antecedent basis; in other words, the claims recited "the widget" or "said widget" **[**10]** before ever introducing the term "widget" at some earlier point in the application. As noted in the Manual of Patent Examining Procedure (the "MPEP"), "a claim which refers to 'said aluminum lever,' but recites only 'a lever' earlier in the claim, is indefinite because it is uncertain as to the lever to which reference is made." MPEP § 2173.05. Third, the "means-plus-function" clause that discloses the "transfer format selection means," was not connected to any other apparatus elements in the claim. To remedy this, the Examiner suggested using the words "connected" or "coupled" to tie the elements together to form a definite configuration.

In their response, the inventors requested reconsideration of or fixed each problem raised by the Examiner. No claims were added or removed. First, they noted that the phrase "is adapted to" does not make a claim indefinite and attached pages from several issued patents to show that the phrase is commonly used to claim inventions. As to the antecedent basis problem, the inventors made corrections to a number of claims to give an antecedent basis to certain elements, mostly by replacing the terms "the" or "said" with the term "a" for the first occurrence **[**11]** of each term in a claim. With respect to the "means-plus-function" problem, the inventors stated that for means-plus-function claims: "It is well established that the elements of a claim can be properly related to each other by relating the elements structurally or by relating the elements functionally." The inventors argued that because the "transfer format selection means" "selects a format for the transfer of data from said source [device] to said destination [device]," it is functionally related to the other claim elements in a way that is sufficient to satisfy the requirements of § 112.

The Examiner accepted the inventors' arguments and changes and allowed all of the claims to issue without further comment.

II. DISCUSSION

A. Basic Principles of Claim Construction

✦Patent claim interpretation is an issue that lies exclusively within the province of the court. Markman, 517 U.S. at 372. In interpreting patent claims, courts must focus primarily on "intrinsic evidence of record," which is comprised of the claims themselves, the patent specification (also known as the written description), and the prosecution history of the patent. Vitronics Corp. v. Conceptronic, Inc., 90 F.3d 1576, 1582 (Fed. Cir. 1996). **[**12]** The intrinsic evidence "the most significant source of the legally operative meaning of disputed claim language." Id.

✦The starting point for any claim construction is the words of the claims themselves. Pitney Bowes, Inc. v. Hewlett-Packard Co., 182 F.3d 1298, 1305 (Fed. Cir. 1999) (citing Vitronics, 90 F.3d at 1582). The words of the claims are generally given their ordinary and accustomed meaning. Vitronics, 90 F.3d at 1582. In addition, descriptive claim terms that stand unmodified (such as a noun, where no limiting adjective is recited) should be given their full scope and should not be limited to a particular subset of the general **[*486]** term. See, e.g., Virginia Panel Corp. v. MAC Panel Co., 133 F.3d 860, 865-66 (Fed. Cir. 1997) (unmodified term "reciprocating" not limited to linear reciprocation); see also Johnson Worldwide Assocs. v. Zebco Corp., 175 F.3d 985, 989 (Fed. Cir. 1999) (collecting cases).

✦Technical claim terms are generally interpreted as they ordinarily would be understood by those working in the field of the invention. Vitronics, 90 F.3d at 1582 (citing Hoechst Celanese Corp. v. BP Chems. Ltd., 78 F.3d 1575, 1578 (Fed. Cir. 1996)). **[**13]** However, a patentee may also "choose to be his own lexicographer and use terms in a manner other than their ordinary meaning, as long as the special definition of the term is

clearly stated in the patent specification or file history." Id.

If the claim language is clear on its face, the court reviews the specification and prosecution history only for the limited purpose of determining whether the patentees used terms in the claims in accordance with their ordinary meaning or whether they deviated from the clear meaning of the claim. See Interactive Gift Express, Inc. v. CompuServe Inc., 231 F.3d 859, 865 (Fed. Cir. 2000). Such deviation may occur if the patentees have chosen to use a term in a manner other than its ordinary meaning, where the claim terms lack clarity to the degree that it is impossible to ascertain the scope of the claim from the claim terms alone, or where the patentees have relinquished certain claim coverage during the prosecution of the patent by amending their claims or arguing to distinguish a prior art reference. Id.

Claims should be interpreted consistently with the specification, which provides context for the proper construction **[**14]** of claims because it explains the nature of the patentee's invention. Renishaw PLC v. Marposs Societa' Per Azioni, 158 F.3d 1243, 1250 (Fed. Cir. 1998). However, when considering the patent specification to construe claim terms, the court must take care to avoid reading "limitations appearing in the specification . . . into [the] claims." Intervet Am., Inc. v. Kee-Vet Lab., Inc., 887 F.2d 1050, 1053 (Fed. Cir. 1989).

Extrinsic evidence may always be consulted to assist in the understanding of the underlying technology. Interactive Gift, 231 F.3d at 865. Otherwise its use should be limited to situations where the analysis of the intrinsic record leaves the claims unclear. See Spectrum Int'l, Inc. v. Sterilite Corp., 164 F.3d 1372, 1378 (Fed. Cir. 1998). If the proper interpretation of the claim is not clear from the intrinsic record, the court may rely on extrinsic evidence such as expert testimony, inventor testimony, technical treatises, or articles. Vitronics Corp., 90 F.3d at 1584. Such extrinsic evidence "may be used only to help the court come to the proper understanding of the claims; it may **[**15]** not be used to vary or contradict the claim language. . . ." Id. Dictionaries, however, are a special form of extrinsic evidence that may be considered along with the intrinsic evidence in determining a claims ordinary meaning. Interactive Gift, 231 F.3d at 866.

Certain types of claims, which are drafted in functional terms, are treated specially for claim construction. When a patent claim contains so called "means-plus-function" elements, which recite a function to be performed, rather than a definite structure, material, or acts for performing that function, § 112 of Title 35 states that such elements are "construed to cover the corresponding structure, material, or acts described in the specification and the equivalents thereof." 35 U.S.C. § 112. Therefore, in construing a mean-plus-function element, the court must identify **[*487]** both the claimed function and the structure, material, or acts necessary to carry out that function. See Micro Chem., Inc. v. Great Plains Chem. Co., 194 F.3d 1250, 1258 (Fed. Cir. 1999); WMS Gaming, Inc. v. International Game Tech., 184 F.3d 1339, 1347 (Fed. Cir. 1999).

Typically, **[**16]** the relevant function is recited in the claim after the prepositional link "for," which ties the means to the function. See Rodime PLC v. Seagate Tech., Inc., 174 F.3d 1294, 1303 (Fed. Cir. 1999); see also Micro Chem., Inc. v. Great Plains Chem. Co., 194 F.3d 1250, 1258 (Fed. Cir. 1999) (§ 112 "does not permit limitation of a means-plus-function claim by adopting a function different from that explicitly recited in the claim."). However, a court may also look to the specification in construing the function. See Serrano v. Telular Corp., 111 F.3d 1578, 1582 (Fed. Cir. 1997) (finding that specification required a broader description of the function than the words of the claims).

"The 'means' term in a means- plus-function limitation is essentially a generic reference for the corresponding structure disclosed in the specification." Chiuminatta Concrete Concepts, Inc. v. Cardinal Indus. Inc., 145 F.3d 1303, 1308 (Fed. Cir. 1998). "A determination of corresponding structure, therefore, is a determination of the meaning of

the 'means' term in the claim and is thus also a matter of claim construction." Mas-Hamilton Group v. LaGard, Inc., 156 F.3d 1206, 1211 (Fed. Cir. 1998). **[**17]**

B. Intel's Position

According to a portion of the abstract of the 830 patent, the patent, in essence, discloses and claims the following:

> A computer communications system including a communication medium, a plurality of nodes [i.e. devices] coupled to the communication medium, and a transfer format selection means for selecting a format for the transfer of data between nodes.

The node, or device, that is sending the data, which is referred to in the patent claims as the source node, uses the transfer format selection means described above to select a transfer format to use to send information to the node that is receiving data, which is referred to as the destination node.

Intel argues that, if the patent claims are given the proper meaning that was bargained for by the inventors, the accused Ethernet devices are covered by the claims of the 830 patent. While the court will not discuss every detail of Intel's argument on claim construction in this section, for the purpose of giving a sense of Intel's position, it will set forth Intel's proposed construction of some of the key claim language. The following section will set forth some of Broadcom's key claim **[**18]** construction arguments.

Neither of these two sections is intended to be exhaustive. Nor will the court improperly consider the accused devices in construing the scope of the claims. See Scripps Clinic & Research Foundation v. Genentech, Inc., 927 F.2d 1565, 1580 (Fed. Cir. 1991) ("claim terms should be construed independent of the accused product, in light of the specification and the file history"). Rather, these sections are intended to give the claim construction some "big-picture" context.

Intel claims that the automatic negotiation feature of the Ethernet devices falls within the bounds of the dynamic transfer format selection that is described in the patent claims. In support of this reading, Intel first contends that the patent's reference to "communication medium" broadly covers a piece or collection of pieces of coaxial cable, telephone wire, optical fiber, or other medium and is not limited to a medium that is shared or switched. As **[*488]** understood by Intel, a "communication medium" includes both the daisy chain network architecture, where each device is connected to a common cable and thus "hears" every other device, and the star network architecture used in **[**19]** Ethernet LANs, where one device having multiple ports (such as a repeater or hub switch) is at the center and selectively transmits the data it receives to other nodes through several cables extending out from it. Similarly, Intel next contends that the claim language referring to "transfer of data" between nodes is not limited to any particular method of data communication and is, therefore, broad enough to cover the accused Ethernet devices. Intel also contends that "source nodes" and "destination nodes," as used in the patent claims, cover any networked device that can transmit or receive data, including intermediary nodes used in Ethernet channels such as repeaters or hubs that are not the original source or final destination of the data to be transmitted. Last, Intel contends that the "transfer format selection means" covers any circuitry or software that performs the selecting function described in the patent by using a bit-string, an inquiry process, and a selection algorithm.

C. Broadcom's Position

Broadcom argues that the claim construction that Intel seeks is improperly broad and that the 830 patent does not cover the accused Ethernet devices. In support of this position, **[**20]** Broadcom principally focuses its arguments in the following areas.

First, Broadcom argues that the "communications medium," as disclosed in the patent, is limited to a shared physical medium, such as a single cable, that is shared by all of the nodes and therefore does not cover separate links between pairs of nodes that are used in the Ethernet LANs that use switching hubs. Second, Broadcom argues that the invention of the 830 patent is directed to dynamic format selection that occurs during the operation of the network, and therefore should not extend to cover the Ethernet auto-negotiation process that is used to configure devices when those devices are initially added to the network.

More specifically, according to Broadcom, the 830 patent's transfer selection means covers a system where a source node selects from its memory a format of stored format sets for all other nodes, and does not cover a system where two nodes exchange information using a code word signal to automatically negotiate a format. Broadcom, based on its contention that a switching hub cannot be a "source node" or "destination node" because it is only an information intermediary, also argues that the accused **[**21]** Ethernet Devices do not select a format for the transfer of data to a selected destination node, as contemplated by the patent, because an Ethernet device is only capable of transmitting data to its link partner using the format that was set during auto-negotiation with that device.

D. The Court's Findings

Intel is asserting four of the forty-five claims of the 830 patent. The claims at issue are: (i) claim 1, an independent claim directed at a "communication system;" (ii) claim 7, which is dependent on claims 6, 2, and 1, and adds the requirement that the bit positions of the bit strings referred to in claim 1 represent transfer formats; (iii) claim 15, an independent claim directed at a "network interface;" and (iv) claim 18, which is dependent on claim 15 and also adds the requirement that the bit positions of the bit strings referred to in claim 15 represent transfer formats. The court will construe the language of each claim in turn.

[*489] 1. Construction of Claim 1

Claim 1 of the 830 patent recites:

> 1. A computer communication system for transferring data between a plurality of nodes comprising:
>
> (a) a communication medium;
>
> (b) a plurality of nodes coupled **[**22]** to said communication medium for the transfer of data between said nodes; wherein said transfer of data is a transfer of data from a source node selected from said nodes to a destination node selected from said node, and
>
> (c) transfer format selection means for selecting a format for the transfer of data from said source node to said destination node;
>
> wherein said plurality of nodes is comprised of at least one default node and at least two supplemented nodes;

wherein each of said nodes has a format set comprised of one or more formats;

wherein said formats are defined in terms of data architecture;

wherein said data architecture is defined in terms of at least one member of a group consisting of encoding, compression, and protocol;

wherein each of said format sets includes at least one default format;

wherein said at least one default format is included in the format sets of each of said nodes;

wherein the format set of each of said supplemented nodes includes at least one supplemental format in addition to said at least one default format;

wherein said transfer selection means is adapted to select a format which is common to the format **[**23]** sets of the source node and destination node and which is compatible with said communication medium.

Col. 11:23-55.

a. "communication medium"

The parties dispute the meaning of the term "communication medium." Intel's proposed construction for the term "communication medium" is the collection of connections (generally, links between nodes) over which negotiation signals and other data in a communications system may be transmitted. According to Intel, the term is not limited to any specific type or arrangement of a communication medium. Intel claims that is proposed construction adopts the common technical meaning of the term, see, e.g., IEEE Standard Dictionary of Electrical and Electronics Terms 581 (4th Ed. 1988) (defining medium as "a vehicle capable of transferring data"), and "communication medium" is a term whose definition is clear on its face.

Broadcom claims the term "communication medium," as used in the claim, is a shared physical medium, such as a wire or a cable, over which data is transferred. In support of its reading, Broadcom points to language in the specification explaining that a "communication medium can be cable, fiber optics, radio channel **[**24]** or other medium of communication shared by the nodes." Col. 1:14-16.

Before construing this claim element, the court makes the following preliminary observations. First, the claim language itself, which is clear on its face, does not contain the word "shared" and does not seem to limit the term communication medium to a single shared link. Next, while the claim language should be interpreted in a manner that is consistent with the specification, it is improper to import limitations from the specification onto the claims. Intervet, 887 F.2d at 1053. Moreover, the Federal Circuit has repeatedly **[*490]** stated that it is improper to add a limiting adjective or adverb before a term that stands unmodified in the claim. See, e.g., Micro Chem., Inc. v. Great Plains Chem., Inc., 194 F.3d 1250, 1258 (Fed. Cir. 1999) (refusing to limit the term "weighing" from the claim to sequential and cumulative weighing); Johnson Wordwide Assocs. v. Zebco Corp., 175 F.3d 985, 989 (Fed. Cir. 1999) (collecting cases); Virginia Panel Corp. v. Mac Panel Co., 133 F.3d 860, 865-66 (Fed. Cir. 1997) (holding that term "reciprocating slide plates"

could **[**25]** cover rotational reciprocation in addition to linear reciprocation, even though embodiment in patent was linear).

Claim 1 indicates the communication medium is the vehicle by which data is transferred between nodes on a network. The particular embodiment that is shown in Figure 1 consists of five conductive cables (labeled 1) over which electrical signals travel. The specification of the 830 patent demonstrates that links other than the cables shown in Figure 1 were contemplated by the inventors. Indeed, as noted by Broadcom, the specification states that "the communication medium can be cable, fiber optics, radio channel or other medium of communication shared by the nodes." Col. 1:14-16. Rather than limiting the definition of communication medium, as Broadcom argues, that phrase indicates that the definition of communication medium was intended to be broader than the preferred embodiment shown in Figure 1. As used in that sentence, the term communication medium is not limited to a "shared" communication medium in the sense that it must be a single cable or wire link that connects all of the nodes such that every transmission placed on the medium by one node is available to all **[**26]** other nodes simultaneously. The plain meaning of "shared" is not limiting. The word "shared" only indicates any communication medium that is covered is used to connect each node to the system. The fact that the patent expressly includes bridges and gateways as nodes supports this conclusion.

In sum, the court declines to adopt Broadcom's limiting construction. Therefore, the court finds, a communication medium is a collection of connections (generally links between nodes) in a communication system over which information may be transmitted.

b. "node"

The parties dispute the meaning of the term "node." Intel's proposed construction for the term "node" is a data processing device that can communicate on a communication system, and, by definition, includes, but is not limited to, devices such as a computer, a file server, a gateway, a co-processor, a modem server, memory, or a printer. In support of its construction, Intel points to the written description, which states:

> As used herein, a "node" is a computer, file server, bridge, gateway, co-processor, modem server, memory, printer or other data processing device ("DPD") coupled to the communication medium though an interface. **[**27]** Col. 1:9-13.

Broadcom argues that the definition of the term "node," should include the limiting language in the written description that requires the node to be a device that is "coupled to the communication medium through an interface." The term coupled is a term of art in patent parlance that means electrically (or otherwise) connected to allow the transfer of signals.

It is clear from the specification's language above, in which the inventors expressly define the term "node" as used in the patent, that the inventors have chosen to be their own lexicographer with respect to this term and have stated their special definition of the term in the patent specification. Vitronics, 90 F.3d at 1582. The **[*491]** court therefore adopts the meaning of node from the specification. A "node" is a computer, file server, bridge, gateway, co-processor, modem server, memory, printer or other data processing device ("DPD") coupled to the communication medium though an interface. The parties, however, dispute whether the phrase "coupled to the communication medium through an interface" modifies and thus limits each term in the list above and hence modifies the definition of "node" itself **[**28]** or only modifies the term "other data processing device," the last term in the list above.

The more natural reading of the phrase is to read the phrase "coupled to the communication medium through an interface" as modifying the definition of the term "node" itself. This reading is consistent with the use of the term "node," throughout the specification. For example, when referring to the algorithms that it discloses regarding the selection, the specification states that "the selection can be executed by the node's interface circuitry or software." Col. 5:33-35. This reading is also consistent with the ordinary meaning of the term node. n2 Therefore, the court finds that the term "node" is any data processing device, including, but not limited to, a computer, a file server, a bridge, a gateway, a co-processor, modem server, memory, or printer, that includes a network interface, through which it is coupled to the communication medium.

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n2 For example, Computer Networking Essentials 672 (2001) (Cisco Press), defines "node" as "an endpoint of a network connection or a junction common to two or more lines in a network. Nodes can be processors, controllers, or workstations . . . Node is sometimes used generically to refer to any entity that can access a network, and it is frequently used interchangeably with 'device.'"

- - - - - - - - - - - - - - - - - -End Footnotes- - - - - - - - - - - - - - - - - **[**29]**

For the sake of clarity, it should be noted that the term "node" is used in a phrase in the claim that recites "a plurality of nodes coupled to said communication medium for a transfer of data between said nodes." Reading the phrase as a whole, one could argue that being coupled to the communication medium is not part of the intrinsic meaning of "node," because if it were, the use as "coupled to said communication medium" as a modifier in the claim, arguably would be redundant. Therefore, the court holds that while a node must be a device that includes a network interface, it does not as part of its own definition have to be coupled, or electronically connected, to the communication medium.

c. "a plurality"

The parties do not appear to dispute the meaning of the term "plurality." Intel claims that a plurality means at least two. While Broadcom agrees that the plain meaning of plurality means at least two, Broadcom claims that the term plurality is later modified by the succeeding claim element "wherein said plurality of nodes is comprised of at least one default node and at least two supplemented nodes" to require at least three nodes.

The court finds that both parties are **[**30]** correct. The term "plurality," standing alone, means at least two. However, the plurality of nodes referred to in the claims is limited by the wherein clause that describes that the plurality must be "comprised of" at least one default node and at least two supplemented nodes. n3 The term "comprising" is a "term of art which means that the claimed elements are essential, but other elements may be added and still form a construct within the scope of the claim. Genentech v. Chiron, 112 F.3d 495, 501 **[*492] (Fed. Cir. 1997).** Therefore, as used in claim 1, the term "plurality" requires at least three nodes.

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n3 The parties dispute the meaning of the terms "default node" and "supplemented node." The court's construction of these terms is discussed, infra, in section II.D.1.j.

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d. "transfer of data"

The parties agree that the term "transfer" means to transmit something from one node to

another. See Modern Dictionary of Electronics, 6th Ed. (1997) at p. 1053. However, the parties dispute the meaning **[**31]** of the term "data" as used in the phrase "transfer of data." The term is not explicitly defined in the patent.

Intel proposes that data should be construed to mean anything passed between nodes that conveys meaning, and includes information defining the format set that is sent from one node to another in addition to other data that may later be sent between the nodes. In support of its proposed construction, Intel argues that the term "data" is used throughout the specification in a variety of ways that indicate the term is to have its broad, ordinary meaning.

Broadcom asserts that Intel's proposed construction of the term "data" is overbroad in two ways. Broadcom first argues that the term "data," as used in the patent, should be limited to basic elements of information that are organized into a frame that identifies the source and destination of the information. A frame is a packet of information that includes the data to be transmitted, an identification of the node that is transmitting the data, and an identification of the node that is the intended recipient of the data. In addition to arguing that data must be information that is sent in frames, Broadcom also draws a distinction **[**32]** between substantive information, which it calls "data," and certain setup information that is transmitted between nodes, which despite the fact that it conveys meaning, is not "data," according to Broadcom.

(i) does "data" need to be transmitted in frames?

Broadcom supports their argument as to why the meaning "data" includes frames by relying on the declaration of their expert, Dr. Tobagi. In his declaration, Tobagi asserts that "[a] person of ordinary skill in the field of the invention would understand that a "transfer of data" over a communication medium means that the data is transmitted in 'frames' because that is the way that data is transmitted over a computer communication system." Tobagi Decl. at P 7. Broadcom finds support for this definition in the specification, noting that every embodiment of the invention that is shown and described in the specification transfers data in frames, which include the addresses of the node that initiated the transfer of data and the address of the node to which the data is intended to be sent.

Broadcom also argues that this definition of data is compelled by the patent's definition of the term "format," which is defined in the specification **[**33]** as "the convention used for data transmission which defines frame organization and content." Col. 3:20-21. Broadcom argues that if the data is not required to be transmitted in frames, this definition of format would be rendered meaningless.

Intel argues that the limitation that Broadcom seeks is unsupported by the claim language and asserts that nothing in the 830 patent requires that data must be transferred in frames. Intel also points out that Dr. Tobagi's statement that the claim language must be limited in this way because networks have to transfer data in frames having source and destination identifiers may itself be too broad. Intel notes that Dr. Tobagi's own book, "Advances in Local Area Networks," which is relevant to how one of ordinary skill would construe the patent claims because it was published **[*493]** one year before the 830 patent was filed, see Schering Corp. v. Amgen Inc., 222 F.3d 1347, 1353 (Fed. Cir. 2000), recognized that only "some of the information [in local area networks] is sent in packets containing a destination address." Advances in Local Area Networks (Karl Kummerle, Fouad A. Tobagi, and John O. Limb eds. 1987).

The court finds that the **[**34]** definition of "data" does not require that data is specifically transferred in frames. The ordinary meaning of the term "data," as understood by those with ordinary skill in the art at the time the patent was filed, did not include this limitation. As Broadcom itself noted in its Opening Brief, "the ordinary meaning of the

term 'data' is basic elements of information which can be processed or produced by a computer." Broadcom's Opening Br. 10. No ambiguity in the claims requires the court to resort to the specification to understand the claim language.

Moreover, even when examining the specification, nothing in the specification indicates that the ordinary meaning of the term "data" should be limited in the manner urged by Broadcom. Broadcom's argument that the use of frames is compelled by the patent specification's definition of the term "format" is unavailing. First, Broadcom misquotes the specification. The specification defines "protocol," and not "format," as "the convention used for data transmission which defines frame organization and content. . . ." Col. 3:20-23. The term "format" is used in the claim language. The term "protocol" is not. According to the specification, **[**35]** "format" is defined in terms of data rate and/or data architecture, which includes "one or more of" a set of data transmission characteristics that includes encoding, encryption, compression, and protocol. Moreover, the patent specification makes it clear throughout that the diagrams of data frames are only examples of embodiments that could be formed based on the claims. Therefore, Broadcom's argument that the specification's definition of protocol does not require that the term "data" is transmitted using frames.

(ii) Is certain setup information excluded from the definition of "data"?

Aside from the definition that includes a requirement that "data" is transmitted using frames, which has been rejected by the court above, Broadcom has not presented to the court a more limited construction that reflects its view that Intel's proposed construction is overbroad. However, Broadcom argues that Intel is wrong in claiming that data is "any thing passed between nodes that conveys meaning," because certain information that is passed between nodes conveys meaning, but is not, in Broadcom's estimation, encompassed by the term "data." In support of this argument, Broadcom refers to the **[**36]** description of the "inquiry dialog" in the patent specification, which describes frames that are passed between the nodes which convey meaning, but are not referred to in the patent as "data."

The inquiry dialog is initiated by the source node when the source node cannot find the format set for the selected destination node in its cache of format sets. Col. 5:15-22; 5:62-64. "The source node transmits an SFInq frame (Supplemental Format Inquiry frame) to the destination node." Col. 5:64-65. Broadcom notes that the SFInq frame, which is illustrated in Figure 12, does not include any "data." Rather, it includes "two or more flags, destination node address, source node address, type field, FCS, flag and abort. The type field indicates that the frame is an SFInq frame." Col. 7:30-32. In contrast, Broadcom notes, the response to the SFInq frame, sent by the destination node, is a "SFResp frame" that does include **[*494]** data. The SFResp frame includes "two or more flags, source node address, destination node address, type field, **data**, FCS, flag and abort." Col. 7:35-36 (emphasis added). The "data" is the destination node's format set: it is the "data specificying dest. node format Set (FsetEff)" **[**37]** shown in the illustration of the response frame in Figure 13. Therefore, Broadcom concludes that Intel's construction of "data" is overbroad because it includes information such as the SFInq frame sent by the source node to request the destination node's format set, which conveys meaning, but Broadcom claims is nonetheless not data.

In response, Intel claims that the frames shown in Figures 9 - 13 derive their organization from the fact that they had to be compatible with the Apple Computer's Appletalk networking system, which was the "default format" of the preferred embodiment. Intel claims that these examples should not be construed to limit the claim language, especially when the patent explicitly indicates that the invention can be implemented in many different environments. See Col 1: 16-23.; Col. 9:19-20.

While "the descriptive part of the specification aids in ascertaining the scope and

meaning of the claims inasmuch as the words of the claims must be based upon the description," what is claimed should not be restricted to the examples given in the specification. Specialty Composites v. Cabot Corp., 845 F.2d 981, 987 (Fed. Cir. 1988). As noted by the **[**38]** Federal Circuit: "Where a specification does not require a limitation, that limitation should not be read from the specification into the claims." Id.; see also Ekchian v. Home Depot, Inc., 104 F.3d 1299, 1303 (Fed. Cir. 1997).

As acknowledged by the parties, the ordinary meaning of the term "data" is quite broad. Moreover, it seems that the term "data" is used throughout the patent in a number of different ways. For example, In one section of the specification, the term "data" refers to a field within a frame, as indicated in Figure 11 and Figure 13. Col. 7:37-39. However, in another section of the specification, the term "data" refers to the entire frame that is sent from the source node to the destination node. Col. 5:55-61. At yet another point in the specification, the term "data" seems to refer to information generally. Col. 2:46:52.

It is improper to pick one of those uses and limit the claim to that one definition. Rather, the court's task is to construe the meaning of the term "transfer of data" as it is used in elements (b) and (c) of claim 1, which recite:

> (b) a plurality of nodes coupled to said communication medium for the transfer of data **[**39]** between said nodes; wherein said transfer of data is a transfer of data from a source node selected from said nodes to a destination node selected from said node, and
>
> (c) transfer format selection means for selecting a format for the transfer of data from said source node to said destination node;

Broadcom asserts that it is not unusual, in the field of communications systems, to distinguish between "data" and other information such as setup information. However, the court disagrees. Nothing indicates that this distinction was adopted in the 830 patent.

While other elements of claim 1 are limited by a number of wherein clauses that follow, the term "data" is not so circumscribed. The unmodified use of the term "data" in the claims themselves indicates that the claim drafter did not intend to vary from the term's broad ordinary meaning. The term "data" in claim elements (b) and (c) encompasses any information that is sent between nodes. Accordingly, the court finds that, in light of **[*495]** the claim language and specification, the term "data" means any thing passed between nodes that conveys meaning.

e. "source node" and "destination node"

(i) does the meaning **[**40]** of source node and destination node include intermediate nodes?

The parties dispute the meaning of the terms "source node" and "destination node." According to Intel, a "source node" is a node that has the capacity to transmit data, whether it is the original creator of the data that is first transmitting the data or is another node (i.e. an intermediate node) that is transmitting the data. A "destination node" is a node that has the capacity to receive data, whether it is the ultimate recipient of the data, or is another node (i.e. an intermediate node) that is receiving the data. In support of this construction, Intel argues that for these terms the 830 inventors were their own lexicographers. When the terms "source node" and "destination node" were first introduced in the patent specification, the specification identified what those terms meant:

> Data is transferable from one node (the "source node") to another node (the "destination node") over the communication medium (e.g. cable 1). Typically, but not necessarily in every case, each node is capable of functioning as a source node (i.e. has the capability to transmit data) and as a destination node (i.e. has the capability **[**41]** to receive data).

Col. 2:46-52. In the above section, in contrast to the non-exhaustive example of a communication medium, indicated by "e.g.," the inventors indicated the definitional nature of their references regarding the nodes by using "i.e.," an abbreviation for the Latin term *id est*, which means "that is" or "that is to say." See Black's Law Dictionary (6th ed. 1990). Intel, thus, contends that by linking the terms to the phrases in parentheses with the term "i.e." the inventors were stating that each phrase in parentheses was another way to express the terms "source node" and "destination node." The definitions that they gave to those respective terms are, "[a node that] has the capability to transmit data" and "[a node] that has the capability to receive data." This meaning is consistent with the language of claim 1, which recites that the data is to be transmitted from a source node, a node capable of transmitting data, to a destination node, a node capable of receiving data.

Broadcom argues that the terms "source node" and "destination node" are not explicitly defined in the specification because the statement referred to by Intel merely states that **[**42]** to *function* as a source node, a node must be able to transmit data and to *function* as a destination node, a node must be able to receive data. Broadcom, thus, contends that in the context of this patent, a person of ordinary skill in the art would understand that the plain meaning of the term "source node" as a device that initiates the transfer of data. Broadcom similarly contends that the plain meaning of the term "destination node" is a device that is the intended recipient of the data.

When the inventors explicitly state the meaning that they are assigning to certain claim terms, the court should give that meaning to those terms. See Renishaw, 158 F.3d at 1249 ("The definition selected by the patent applicant controls"). Broadcom's reading of the "i.e." language above is strained. The specification does not describe certain nodes that function as source nodes or destination nodes, but are nonetheless not source nodes or destination nodes. Nothing in the patent indicates that the inventors intended to adopt the narrower meaning that Broadcom seeks, which requires the **[*496]** source node to be the original source of the data to be transmitted and the destination **[**43]** node to be the ultimate destination of the transmitted data. Rather, the patent provides, as specific examples of nodes, devices such as bridges and gateways that would rarely, if ever, be the original source of the data or the ultimate destination of data, but would instead act as intermediate nodes. Nowhere in the specification does the patent indicate that such nodes could not function as source or destination nodes. Rather, the specification states that "data is transferable from one node (the "source node") to another node (the "destination node") and pointed out that a single node can be both a "source node" and a "destination node" if it is both capable of sending and receiving data.

Therefore, the court finds that the meaning of the term "source node" is a "node," as defined above, that has the capability to transmit data. A "destination node" is a "node," as defined above, that has the capability of receiving data.

(ii) Are the meanings of source node and destination node limited to include network addresses or to store information about its own data transfer format capabilities and the data transfer format capabilities of other nodes coupled to the network?

Broadcom **[**44]** further submits that the meanings of the terms "source node" and "destination node," as used in the claims, are limited in a number of ways. First, each

"source node" is required to store information about its own data transfer format capability (or capabilities), as well as the data transfer format capability (or capabilities) of the other nodes coupled to the network. Second, each "source node" and each "destination node" must have a network identification or address to permit a source node to select a destination node to which it wishes to transfer data.

With respect the Broadcom's argument that each "source node" must have the capability to store information about its format sets and the format sets of other nodes coupled to the network, Intel argues that Broadcom's argument finds no support in the claim language. Rather, Intel notes the "cache" element is not brought into the claims until dependent claim 2, which claims:

> A computer communication system in accordance with claim 1 wherein said transfer format selection means is comprised of a source node cache for node format sets and a destination node cache for node format sets; and wherein transfer format selection is **[**45]** made by the source node by searching for the destination node format set in said source node cache and by selecting a format which is included in said destination node format set and the source node format set.

Col. 11: 56-64.

The court finds that although the examples in the specification support Broadcom's contention that each "source node" must have the capability of storing such information in its cache, or memory, see Col. 4:59 - 5:11, claim 1 cannot be so limited. In interpreting claims, it is improper for courts to read into an independent claim a limitation that is explicitly set forth in another claim. D.M.I., Inc. v. Deere & Co., 755 F.2d 1570, 1574 (Fed. Cir. 1985). Rather, each claim of a patent constitutes a separate invention and gives rise to separate rights. Jones v. Hardy, 727 F.2d 1524, 1528 (Fed. Cir. 1984). This concept, known as claim differentiation states that claims should be presumed to cover different inventions.

In one example given, which appears to be an implementation of the more narrow claim 2, the format capability (or capabilities) of the destination node must be **[*497]** stored because that is what the source node's transfer **[**46]** format selection means uses to select the proper data transfer format. The specification notes that, in this particular embodiment, when the cache of a given node is incomplete and does not contain an entry for the destination node's formats, an inquiry dialog must be initiated, in which the source node cache determines the destination node supported transfer formats and updates its cache with the format set of the destination node. However, because "cache" is the only element that is added in dependent claim 2, under the doctrine of claim differentiation, the court rejects Broadcom's proposed limitation on claim 1. See Beachcombers Int'l v. Wildewood Creative Prods., 31 F.3d 1154, 1162 (Fed. Cir. 1994).

If the court were to adopt Broadcom's proposed construction, claim 2 and other claims, such as claim 7, that are dependent on claim 2 would be rendered superfluous. See id. Therefore the court declines to adopt a construction that so limits the source node's "transfer format selection means" as disclosed in claim 1.

Second, as noted above, the 830 patent does not indicate that only nodes called out by particular fields in a frame can be "source nodes" and "destination **[**47]** nodes." The examples cited by Broadcom for the proposition that the source node address and the destination node address are always included in a frame data transmission between the source and destination nodes, see Fig. 9-13, are only examples of the preferred embodiment, Appletalk. Specialty Composites, 845 F.2d at 987. The broad claim language and express language of the specification indicate that the invention is not to be limited

to that particular system or a system that uses the same data types as that system. Karlin Tech., Inc. v. Surgical Dynamics, Inc., 177 F.3d 968, 973 (Fed. Cir. 1999) (stating that "the general rule, of course, is that the claims of a patent are not limited to the preferred embodiment, unless by their own language"). Therefore, the court finds that the definition of "source node" and "destination node," like the definition of "data" is not limited to require a "source node address" or "destination node address." Naturally, the transfer format selection means element must have some ability to identify the supported format sets that are compatible with the destination node in order to allow it to select a data transfer **[**48]** format that is compatible with the destination node. However, this ability to identify is not limited to implementations that use an addressing scheme with specific "source addresses" and "destination addresses" that are transmitted in frames. Moreover, it is part of the function and corresponding structure of the transfer format selection means, and not a limitation on the definition of "source node" or "destination node."

In sum, the court finds that a "source node is a "node" that has the capability to transmit data. A "destination node" is a node that has the capability to receive data.

f. "destination node selected from said nodes"

The parties dispute the meaning of the phrase "destination node selected from said nodes" and argue over whether or not it limits the definition of source node. The element in full states:

> a plurality of nodes coupled to said communication medium for a transfer of data between said [plurality of] nodes; wherein said transfer of data is a transfer of data from a source node selected from said nodes to a destination node selected from said nodes.

Relying on its abbreviated quotation of the claim element, Broadcom, in its opening brief, **[**49]** contends that the language of the **[*498]** claim element requires that there be "a transfer of data from a source node . . . to a destination node *selected* from said nodes." Broadcom argues that based on the quoted claim language, the source node must be the entity that "selects" the destination node. Intel contends, however, that if the claim is read in full, it is clear that no structure in the patent "selects" the source node; rather, Intel argues, by stating that both the source node and destination node are "selected from said nodes," the claim merely indicates that both the source node and the destination node must be one of the plurality of nodes. Intel concludes that the only limitation that arises from this language on the meaning of source and destination node is that both must be one of the plurality of nodes that is referred to earlier in the claim.

The court finds Intel's reading of the plain language of the claim to be persuasive. The "selected from said nodes" phrase that modified both the source node and the destination node simply requires the source node and the destination node are each one of the plurality of nodes that is earlier references in the claim.

g. "format **[**50]** "

The parties dispute the meaning of the term "format." Intel argues that the term "format," as defined in the claims and specification, is a form in which data is transmitted between nodes according to its encoding, protocol, encryption, and compression. Therefore, Intel submits that one format is different from another format if it uses different encoding, protocol, encryption, or compression, or any different combination thereof. However, one format is not different from another format if they both use the same encoding, protocol, encryption, and compression, but differ only in transmission rates.

While agreeing that the asserted claims expressly limit the format to a format "defined in terms of data architecture," Broadcom argues that Intel's construction the term "format" combines additional claim limitations that appear only in the asserted claims. Specifically, Broadcom argues that the Intel's construction combines the term "format" with two separate claim elements - "wherein said formats are defined in terms of data architecture" and "wherein said data architecture is defined in terms of at least one member of a group consisting of encoding, encryption, compression, and protocol. **[**51]** " According to Broadcom, the term "format," standing alone, must have a broader meaning, because it cannot include limitations that are recited only in some of the claims.

The court finds that the specification defines each of the terms relating to the definition of format. The term "format" is a data transmission characteristic that is defined in terms of "data architecture" and/or the "rate of data transmission." The "rate of data transmission" is defined in the specification as "the rate at which data bits are transmitted from source node to destination node." "Data architecture" is defined in the specification "by one or more of the following data transmission characteristics: encoding, encryption, compression, and protocol."

The phrase "wherein said formats are defined in terms of data architecture" qualifies the term format, as used in claim 1, and limits it to formats that are defined in terms of "data architecture." This means that the formats referred to in claim 1 are not defined in terms of the "rate of data transmission," but are limited to being defined in terms of "data architecture."

The phrase "wherein said data architecture is defined in terms of at least one member **[**52]** of a group consisting of encoding, encryption, compression, and protocol," limits the "data architecture," as used in **[*499]** the "format" of claim 1, to a one or more members of this group of four specific types of data architecture. Each term is defined in the specification, and each term is well-known to persons of ordinary skill in the art. The court adopts each of the meanings of the four types of data architecture, as they are set forth in the specification. "Encoding" is the waveform pattern or other waveform representation of data bits used for transmission of data on the communication medium. "Encryption" is the organization and arrangement of data into a nonintelligible form for transmission. "Compression" is the representation of data in a shorter form which requires fewer bits to represent the data. "Protocol" is the convention used for data transmission which defines frame organization and content including command codes for the protocol handler of the destination node.

h. "transfer format selection means for selecting a format for the transfer of data from said source node to said destination node"

The parties dispute the meaning of the phrase "transfer format selection **[**53]** means for selecting a format for the transfer of data from said source node to said destination node." The meaning of this claim element is one of the most vigorously disputed terms in the 830 patent. The parties agree that this claim element is written in the means-plus-function language of 35 U.S.C. § 112. Therefore, the court will construe the phrase to determine both the claimed function and the structure that is disclosed in the specification that corresponds to that function. Chiuminatta, 145 F.3d at 1308.

(i) what is the claimed function?

When determining the claimed function in a means-plus-function element, the function is often simply found in the phrase that follows the word "for." Here, the element recites: "transfer format selection means for *selecting a format for the transfer of data from said source node to said destination node*."

In this case, however, each of the asserted claims in the 830 patent also contains the following phrase: "wherein said transfer format selection means is adapted to select a format which is common to the format sets of the source node and destination node and which is compatible with said **[**54]** communication medium." This phrase further describes the function of the transfer format selection means and is reenforced by the specification which repeatedly describes the dynamic selection of compatible formats between nodes as the purpose of the invention. For example, the specification states that "transfer format selection means in the form of circuitry and software provides for the selection of a data transfer format which is included in the source node format set and the destination node format set and is compatible with the communication medium." Col. 1:53-57. The prosecution history supports reading this limiting wherein phrase as part of the claimed function. In response to the Examiner's rejection of the claim during prosecution as indefinite under 35 U.S.C. § 112, the applicants argued that the transfer format selection means was not indefinite because its functional relationship to the other apparatus elements of the claims was further specified in the wherein phrase recited above.

Thus, the court finds that the claimed function of the transfer format selection means element as modified by the limiting wherein clause is selecting a format for **[**55]** the transfer of data from a source node to a destination node, which is common to the format sets of the source node and the destination node and which is compatible with said communication medium.

[*500] (ii) what is the claimed structure?

Section 12, P 6 of Title 35, the statutory provision that sets forth the rules for means-plus-function claims, allows claim drafters to use means expressions without recitation of all the possible means that might be used in a claimed apparatus. However, "the price that must be paid for use of that convenience is the limitation of the claim to the means specified in the written description and equivalents thereof." See O.I. Corp. v. Tekmar Co. Inc., 115 F.3d 1576, 1583 (Fed. Cir. 1997); see also B. Braun Med., Inc. v. Abbott Labs., 124 F.3d 1419, 1424 (Fed. Cir. 1997); Serrano v. Telular Corp., 111 F.3d 1578, 1583 (Fed. Cir. 1997).

Section 112, P 6 provides that:

> An element in a claim for a combination may be expressed as a means or a step for performing a specified function without the recital of structure, material, or acts in support thereof, and such claim shall be construed to cover **[**56]** the corresponding structure, material, or acts described in the specification and equivalents thereof.

35 U.S.C. § 112, P 6. In interpreting section 112, P 6, the Federal Circuit has explained that where the claim at issue is a process claim that recites a combination of steps (i.e., a step-plus-function claim) the claim covers corresponding functional "acts" that are recited in the patent. O.I. Corp., 115 F.3d at 1582-83. However, where the claim at issue is an apparatus claim that recites a combination of elements (i.e., a means-plus-function claim), as the claim here, the claim covers corresponding "structure and material." Id. ("structure and material go with means, acts go with steps").

The parties dispute what is included in the claimed structure of the transfer format selection means. In its briefs, Intel claims that the language of this claim element covers hardware, software, or a combination of the two for selecting a format for the transfer of data from a source node to a destination node, having the following characteristics:

(i) A string of bits, wherein each bit position represents the ability (by being set **[**57]** to "1") or inability (by being set to "0") of a node to communicate using the format represented by the corresponding bit position.

(ii) A process by which the first node obtains the bit-string that indicates the supported formats of the second node by sending an inquiry to the second node and receives a response that contains the bit-string.

(iii) A selection, from the formats that are common between the format sets of the two nodes, of a format for the transmission of data. This selection is executed by the node's interface circuitry or its software, or a combination of both.

Intel contends that these three characteristics are components of a process or algorithm, and that the disclosed algorithm constitutes a structure.

As a preliminary matter, it should be noted that with respect to the first two components of Intel's purported structure of the transfer format selection means, Broadcom makes arguments, under the theory of claim differentiation, that the structure urged by Intel cannot be correct. For example, Broadcom states that the use of a bit string to represent each format set is recited in dependent claim 6, that depends on claim 2, that in turn depends **[**58]** on claim 1, which recites the transfer format selection means. According to the theory of claim differentiation, each claim is presumed to disclose a separate invention. Jones, 727 F.2d at 1528. Broadcom asserts that if the transfer format selection means recited in claim 1 includes a bit string, the scope of claim 1 would encompass the dependent claims and would render **[*501]** claim 6 superfluous. Similarly, Broadcom points out that the use of inquiry dialog is disclosed in dependent claim 3, which depends on claim 1. Broadcom reasons that because claim 3 adds additional "means . . . to conduct an inquiry dialog" to the transfer selection means of claim 1, the transfer format selection means of claim 1 does not and cannot include the inquiry dialog.

In opposition to Broadcom's claim differentiation arguments, Intel argues that the theory of claim differentiation has limited application when dealing with means-plus-function elements. Intel points to Federal Circuit authority that indicates that under § 112, P 6, claim differentiation cannot be used to broaden a means-plus-function element beyond the structure in the specification, even if the dependent claim recites the **[**59]** same exact structure. See Medtronic, Inc. v. Advanced Cardiovascular Sys., Inc., 248 F.3d 1303, 1313 (Fed. Cir. 2001) (citing Laitram Corp. v. Rexnord, Inc., 939 F.2d 1533, 1538 (Fed. Cir. 1991)); see also Globetrotter Software, Inc. v. Elan Computer Group, Inc., 236 F.3d 1363, 1369 (Fed. Cir. 1997). These opinions reason that even if the structure contained in an independent claim is recited explicitly in a dependent claim, the two claims will have differing scope, because the independent claim literally covers the structure described in the specification and equivalents thereof, while the dependent claim does not literally cover equivalents. Laitram Corp., 939 F.2d at 1538. Rather, § 112, P 6, instructs a court to review the specification and prosecution history to determine the claimed structure.

In light of this authority, the court will not base its claim construction relating to the underlying structure of the transfer format selection means on the theory of claim differentiation. Rather, the court will review the specification as a whole to determine what structure is disclosed.

According to Broadcom, the **[**60]** three "characteristics" referred to by Intel do not

define the structure, whether in the form of hardware, software, or an associated algorithm, that is required to perform the recited function. Broadcom asserts that these characteristics identify a series of "acts" or "steps" but do not identify any "structure," as required by section 112, P 6. In essence, Broadcom contends that a means-plus-function cannot broadly define its means in terms of functional processes, because the coverage of such a claim would reach any structure that could be designed to perform the disclosed function, a result not intended by section 112, P 6; rather, a means-plus-function claim is limited to its specific disclosed structure. Broadcom, thus, argues that the patent fails to disclose any specific corresponding structure that performs the claimed function of the "transfer format selection means."

Because the issue of invalidity is not presently before the court and Broadcom is not now seeking a ruling that the claims are invalid for indefiniteness, see Budde v. Harley-Davidson, Inc., 250 F.3d 1369, 1376 (Fed. Cir. 2001), Broadcom submits that the for the purposes of claim construction; **[**61]** "transfer format selection means" must be construed to cover the only "structure" that is disclosed by the patent: "any circuitry or any software" that is capable of performing the claimed function as defined above.

In determining the associated structure of a means-plus-function claim, the court must read the specification as a whole. Serrano, 111 F.3d at 1583. Broadcom correctly states that passages of the patent that refer to the transfer format selection means state that it may be implemented using "circuitry and software." In fact, according to the specification, the patent "disclosure does not include specific circuitry and computer programs for the **[*502]** implementation of the [the transfer format selection means]."

Intel, however, relies on the Federal Circuit's proposition in WMS Gaming Inc. v. International Game Tech., 184 F.3d 1339, 1349 (Fed. Cir. 1999), that for computer implemented inventions that correspond to means-plus-function elements, the structure is the circuitry or software programmed to perform the algorithm (or formula) described in the patent that is used to perform the function. Therefore, the patent specification need not disclose **[**62]** specific circuitry or software; rather, the patent must disclose a specific algorithm for performing the stated function with which software or circuitry can be programmed or configured. Intel points out that language in the specification explains that the disclosure did not include specific circuitry and computer programs for the last component of their three-component structure, because the circuitry and software to perform that sub-function "are well within the knowledge and skill of persons of ordinary skill in the art and means to accomplish the above described functions and objectives are known in the art." Col. 10:44-47; Col. 11:3-11.

The parties' positions reveal a tension in the law between the paragraphs within § 112. See Atmel Corp. v. Information Storage Devices, Inc., 198 F.3d 1374, 1381 (Fed. Cir. 1999). Section 112, P 1 requires that the disclosure in the patent specification be sufficient such that one skilled in the art will know and understand how to make or use the invention. 35 U.S.C. § 112, P 1. Section 112, P 2 requires claims that particularly and distinctly indicate the subject matter that the inventor regards as his **[**63]** or her claimed invention. 35 U.S.C. § 112, P 2. Section 112, P 6, the means-plus-function provision, also focuses on claim language, but directs one to the patent specification for its meaning. 35 U.S.C. § 112, P 6.

It is well-settled that in order to determine whether an invention is properly enabled under § 112, P 1 and particularly claimed under § 112, P 2, one must view the disclosures taking into account whether one skilled in the art will know and understand what is claimed and how to make or use the invention. See § 112, P 1 (providing that enablement requirement is satisfied if the patentee sets forth in the written description what one skilled in the art would need to know to make and use the claimed invention); Atmel Corp., 198 F.3d at 1382 (holding that for a mean-plus-function claim to meet the particularity requirement of § 112, P 2, "the corresponding structure(s) of the function

must be disclosed in the written description in such a manner that one skilled in the art will know and understand what structure corresponds to the means limitation"). As stated earlier, the means-plus-function provision, **[**64]** § 112, P 6, requires the inventor to disclose "structure . . . described in the specification and equivalents thereof." 35 U.S.C. § 112, P 6.

But what if a part of the structure that corresponds to a means-plus-function element's function is well-known and well-understood by those skilled in the art? In that case, must all possible structures be disclosed, or may the patentee rely on the fact that the structure is known by one skilled in the art? This issue was addressed by the Federal Circuit in Atmel Corp. v. Information Storage Devices, Inc., 198 F.3d 1374 (Fed. Cir. 1999). In Atmel Corp., the Federal Circuit held that the proper inquiry under § 112, P 6 "asks first whether structure is described in the specification, and, if so, whether one skilled in the art would identify the structure from the description." Atmel Corp., 198 F.3d at 1382. The court elaborated on this statement, stating:

> Fulfillment of the 112 tradeoff cannot be satisfied when there is a total omission **[*503]** of structure. There must be structure in the specification. This conclusion is not inconsistent with the fact that the knowledge of one skilled **[**65]** in the particular art may be used to understand what structure(s) the specification discloses . . . because such resources may only be employed in relation to structure that is disclosed in the specification. . . . All that one needs to do in order to obtain the benefit of [the means-plus-function] claiming device is to recite some structure corresponding to the means in the specification, so that one can readily ascertain what the claim means

Id. at 1382.

Thus, the proper inquiry is not whether the structure that corresponds to the claimed function is well-known in the art, but whether the patent discloses a sufficient structure or, in this case, a sufficient algorithm with which one skilled in the art could program a computer or configure a circuit to perform the claimed function. See WMS Gaming Inc., 184 F.3d at 1349 ("In a means-plus-function claim in which the disclosed structure is a computer, or microprocessor programmed to carry out an algorithm, the disclosed structure is not the general purpose computer, but rather the special purpose computer programmed to perform the disclosed algorithm").

As more fully set forth above, **[**66]** Intel argues that the patent specification describes a process having the following components: (i) a bit string that represents a format set; (ii) a process of conducting an inquiry dialog; and (iii) "[a] selection of a format . . . for the transfer of data." Intel argues that these components together defines a specific algorithm for performing the function of selecting a common format, as required to program a "special purpose computer." WMS Gaming Inc., 184 F.3d at 1349. The court finds that the first two components of the corresponding structure are well-defined in the patent specification. However, with respect to the third element, which seems to re-recite the claimed function, the inquiry is more difficult. The inventors did not extensively disclose specific algorithms for comparing bit strings to determine what transfer formats are common between the source and destination node, nor did they extensively disclose specific algorithms for selecting from the common transfer formats, a single format to use. Rather, the inventors stated in the specification that these algorithms are well-known in the art and intended that they could be applied in a flexible manner **[**67]** and "adapted . . . for various applications without departing from its generic concept," depending on the objectives of the particular application. Col. 11:12-16.

First, the bit string that is disclosed is not literally part of the algorithm of the transfer format selection means, whose function is to select a common format to transfer information between the source and destination node. Rather, the bit string, which represents the supported format sets of each node, is used by the transfer format selection means to perform its function. See O.I. Corp., 115 F.3d at 1580. Although the bit string that represents formats literally is not part of an algorithm, it is an input to an algorithm that uses information from the bit strings to select a common transfer format. The only means for conveying information about format sets that is disclosed in the patent is the use of bit strings, where bit positions represent entire or parts of format sets. See Col. 3:64-5:10. The court, thus, finds that because the bit string is "an essential part of the structure required to perform the function," that it is part of the corresponding structure. Globetrotter Software, 236 F.3d at 1368 (Fed. Cir. 1997). **[**68]**

The second purported component of the transfer format selection means is the "process" (or algorithm) for sending an **[*504]** inquiry dialog and obtaining the destination node's format set. Intel claims that this process, as disclosed in Figures 4-6 and the associated text in the specification, is a "an essential component and is necessary to perform the recited function." The inquiry dialog, however, is not a complete description of the process of obtaining the format set of the destination node. According to the specification, the inquiry dialog is only used if the source node does not already "know" the supported format set of the destination node. See Col. 5:15-25. In the embodiment described, "each node stores in memory (or a memory to which it has access)" its own format set and the format sets of other nodes on the network. Col. 4:38-40. The flow-chart algorithm provided for in Figure 4 describes the process that the source node uses. First, it searches its memory for the bit string representation of the destination node's format set. If the format set for the destination node is not found in memory, it then performs an inquiry dialog with the destination node. In response to this **[**69]** inquiry, the destination node sends back to the source node (using the default format) a bit string representation of its format set. The algorithm for the inquiry dialog is described in Figure 6 and in the associated text in Col. 5:62-6:9 of the specification. Figure 5, then describes the algorithm that is used to send the data using the chosen format set. Thus, the second component for the structure of the format selection means are the algorithms that are described above for searching for the bit string representation of the format set of the destination node, by first searching memory that is available to the source node, and then, if that search fails to find the format set, by conducting an inquiry dialog with the destination node. These algorithms for obtaining the bit string representation of the format set of the destination node, together with the bit string representation of the format set of the destination node itself, form the centerpiece of the invention of the 830 patent. As the specification notes: "the interface circuitry and interface software execute the algorithms described earlier for transmitting and receiving data and provide the format selection means." Col. **[**70]** 10:44-47. Accordingly, the court finds that the second part of the structure is hardware or software that is configured or programmed to perform the algorithms shown in Figures 4-6.

Once the source node has the supported format set of the destination node, which is represented by a bit string, as noted above, it must choose a common format with which to transmit the data. Thus, the third and final component that defines the transfer format selection means, according to Intel, is the "a selection, from the formats that are common between the format sets of the two nodes, of a format for the transmission of data."

Intel argues that this component is "a comparison . . . of the string of bits in the two [bit strings], resulting in a selection." In support of this argument, Intel points to the chart in the specification that shows how bit strings can represent the supported format sets of different nodes. This chart and the associated text describe the structure of the bit string: bit positions are used to represent which formats are supported. Nowhere in the specification or associated figures does the 830 patent disclose a detailed flow-chart or formula that could be programmed to **[**71]** make this selection once the bit string

representing the format set of the destination node is obtained. Rather, the function of choosing a common transfer format simply is represented in Figure 4, by a box that is labeled by the function "Choose (FsetEff)," where FsetEff is the bit string representing the destination node's supported format set. The associated text **[*505]** states that after the bit string representing the format set of the destination node is obtained, "then a format . . . is chosen from among the [common] formats of the destination node's FsetEff." Col. 5:23-25. Although the patent does not refer to any specific examples of how to implement such a function, the patent states that "the means to accomplish the above-described functions and objectives are known in the art." Col. 11:10-11.

Thus, neither the specification nor the figures explains exactly how this choice is made or how the common formats are identified. Rather, the specification states only that the "available formats" from which the format set is chosen from are "those formats which are common to (i.e. included in) the source node format set and the destination node format set." Col. 5:25-28. For the purposes **[**72]** of enablement or definiteness, it may be clear to one skilled in the art, as claimed by Intel, once the bit string representation of the destination node's format set is obtained by the source node, how to program software or configure hardware to compare the each bit position of the bit string representation of the destination node's format set to corresponding position of the bit string representation of the source node's format set to determine the format or formats that are common between the two nodes.

For the current purpose of technically construing the corresponding structure under § 112, P 6, before turning to the inquiry of whether those with ordinary skill in the art would identify the structure from the description, the first inquiry must be "whether structure is described in the specification." Atmel, 198 F.3d at 1381. The court finds that the structure identified in the specification that corresponds with the final step of choosing a common format is the "Choose (FSetEff)" algorithm identified in Figure 4.

Regarding this Choose() algorithm, the specification states that:

> If there is more than one common format, then the node will select a format **[**73]** from among the common formats. This selection can be random or can be based upon a predetermined priority or can be based upon any criterion or criteria chosen by or for the user. The selection can be executed by the node's interface circuitry or software running on the node's [data processing device] . . .

Col. 5:28-35. The specification follows this statement with an example of the selection criteria that can be used, stating that the source node could "select a format having the desired encryption with the highest rate of data transfer available for the selected encryption." Thus, the specification intentionally leaves undisclosed the inner workings of the Choose() function that is used to select a transfer format.

Although the third element of Intel's proffered structure is left open ended in this manner, the court declines to adopt the construction urged by Broadcom in its brief that "because there is no specific structure disclosed for performing the claimed function . . . the [transfer format selection means] must be construed to cover . . . any circuitry or any software that is capable of performing the claimed function." Such a construction is too **[**74]** broad, because the inventors did disclose the specific structures that they deemed essential to the invention. Essentially, the 830 patent discloses an algorithm whose first step is to represent format sets of nodes using bit strings, whose second step is to obtain that bit string, and whose third step is to select a common transfer format with which to transmit information between the nodes. The corresponding structure to perform the function of the format selection means is circuitry or software programmed to

perform those three steps. See WMS Gaming Inc., 184 F.3d at 1349.

[*506] Accordingly, the court finds that the specification does specifically disclose the corresponding structure that the inventors intended to be the essence of their invention: the bit string that represents the format sets of the nodes and the set of algorithms that are used by a source node to obtain that bit string. The structure/algorithms associated with these two components are well-detailed in the specification and figures. With respect to the third component of the structure, the inventors did not disclose any detailed algorithm to perform the sub-function of selecting of the transfer format **[**75]** to be used. Instead, relying on the knowledge of those with ordinary skill in the art, the inventors intentionally left this part of the structure, referred to in Figure 4 by the function "Choose(FSetEff)," open and flexible.

In sum, the corresponding structure that is disclosed to perform the claimed function of the transfer format selection means is: (1) a bit string representation of the destination node's supported format set; (2) that is retrieved in accordance with an algorithm disclosed in Figure 4 that first searches the source node's associated memory, and then, if necessary, conducts an inquiry dialog; and (3) any circuitry configuration or any software programmed to execute an algorithm that first uses the bit string representation of the destination node's supported format set to determine which transfer formats are common to the transfer format sets of the source node and the destination node and compatible with the communication medium and then selects one transfer format from those common transfer formats to use in transmitting the information to the destination node. This selection can be random or can be based upon a predetermined priority or can be based upon any **[**76]** criterion or criteria chosen by or for the user.

i. "format set"

The parties dispute the meaning of the term "format set." Intel claims that a format set is the collection of individual formats for a node, represented by a string of bits, where each individual bit represents a single format. Broadcom agrees that the term "format set," as used in the phrase in claim 1, "wherein each of the said nodes has a format set comprised of one or more formats," means that every node coupled to the network must have a "format set" and that the format set is a collection of individual formats for a node that contains at least "one format." Broadcom disagrees, however, that a "format set" must be represented by a string of bits, where each individual bit represents a single format.

The claims of a patent must be read as a whole. Reviewing the claims, the court finds that a format set need not be represented by a string of bits. Claims 6 and 17, which depend, respectively from claims 1 and 15, add the limitation "wherein said format sets are represented by bit strings." The term "format set" must have the same meaning in each claim. Southwall Tech., Inc. v. Cardinal IG Co., 54 F.3d 1570, 1579 (Fed. Cir. 1995) **[**77]** ("claim terms must be interpreted consistently"). If the stand alone term "format set" were required to be represented by a bit string, the scope of this term as used in claims 6 and 17 would be superfluous. Beachcombers, 31 F.3d at 1162. Therefore, the court finds that the term "format sets" means a collection of individual formats for a node consisting of at least one format.

j. "default node" and "default format"; "supplemented node" and "supplemented format"

Claim 1 further limits the plurality of nodes that it is claiming by using the phrase:

> **[*507]** wherein said plurality of nodes is comprised of at least one default node and at least two supplemented nodes; wherein each of said nodes has a format set comprised of one or more formats . . . wherein each of said format sets includes at least one default format . . . wherein said at least one default

format is included in the format sets of each of said nodes . . . [and] wherein the format set of each said supplemented node includes at least one supplemental format in addition to said at least one default format. . . .

Col. 11:34-38, 44-50. The parties dispute the meaning of the terms "default format, **[**78]** " "default node," "supplemented format," and "supplemented node," as used in that phrase.

The parties first dispute the meaning of the terms "default format" and "supplemented format." Intel contends that a "default format" is the format that the default node shares with the other nodes in the communication system. Broadcom urges the court to adopt their construction that a "default format" is the format that every node coupled to the communication medium can use to transfer data to every other node coupled to that medium. Intel contends that a "supplemented format" is an additional format that is distinct from the "default format." Broadcom argues that a "supplemented format" is one or more additional formats that are not common to all nodes coupled to the network. As one can glean from reviewing the parties proffered constructions, the parties' definitions regarding this term are very similar.

The 830 invention, as a whole, is directed at enabling all nodes to communicate with each other using a compatible and optimal transfer format. The specification explains that although nodes on the network may be qualitatively different in terms of the different transfer formats that they **[**79]** can use, based on the existence of a common format for data transmission between nodes, a nodes sending data to another node can use the invention to determine the best compatible format in which to do so. In other words, each node will be able to transfer data to each other node. According to the specification, "the node format sets . . . each include a default format, i.e., the default format is common to each node format set This default format ensure that all nodes will be able to communicate with each other Supplemented nodes . . . can communicate with the default format, and, as described below, with supplemental formats." The specification also expressly notes that multiple "default formats" may be used to practice the invention. Col. 3:44-46.

Based on the claims and specification language, the court finds that the meaning of the term "default format" is a common format that every node coupled to the communication medium can use to transfer data to every other node coupled to that medium. The meaning of the term "supplemental format" is an additional format, distinct from the "default format," that is not common to all nodes coupled to the network.

The parties **[**80]** similarly dispute the terms "default node" and "supplemented node." Intel contends that according to the claim language and the specification a "default node" is a node having a format set that includes the default format, which is the format the default node shares with the other nodes in the communication system. Intel similarly contends that a "supplemented node" is a node having a format set that includes, in addition to the default format (or default formats), one or more additional formats.

Broadcom claims that a "default node" is a node coupled to the communication medium which can transfer data over the network **[*508]** only in the default format. It is the data transfer format that every node which is coupled to the communication medium can use to transfer data to every other node coupled to the medium. Broadcom argues that a "supplemented node" is a node coupled to the communication medium which can transfer data over the network in the default format and which can also transfer data over the network in one or more supplemental formats.

According to Broadcom, Intel's proffered constructions are wrong for two reasons. First, Broadcom asserts that, according to the claims **[**81]** and specification, a default node

is a node that includes only the default format, and a supplemented node is a node that includes in its format set one or more supplemental formats in addition to the default format. Second, Broadcom claims that it is not enough for the nodes to "have" a particular format in its format set. Rather, each node must be able to "use" each format to communicate with other nodes.

For the same reasons underlying the construction of "default format" and "supplemented format," which are stated above, the court finds the terms are defined as follows. A "default node" is a node coupled to the communication medium which can transfer data over the network only in the default format or default formats. A "supplemented node" is a node coupled to the communication medium which can transfer data over the network in the default format or default formats and which can also transfer data over the network in one or more supplemental formats.

2. Construction of Claim 7

Claim 7 of the 830 patent is a dependent claim that depends on claim 6, which in turn depends on claim 2, which in turn depends on claim 1. "A claim in dependent form shall be construed to incorporate **[**82]** by reference all the limitations of the claim[s] to which it refers." 35 U.S.C. § 112 P 4. Incorporating each of these dependencies, claim 7 recites:

> A computer communication system in accordance with claim 1 wherein said transfer format selection means is comprised of a source node cache for node format sets and a destination node cache for node format sets; and wherein transfer format selection is made by the source node by searching for the destination node format set in said source node cache and by selecting a format which is included in said destination node format set and the source node format set, wherein said format sets are represented by bit strings, [and] wherein bit positions of said bit strings represent formats.

Col. 11:56 - 12:28.

Many of the terms that are used in claim 7 have been previously construed above in the context of claim 1. The meaning of those terms in claim 7 is identical their meaning in claim 1. The terms whose meaning has not yet been construed are discussed below.

a. "cache"

The parties do not dispute the meaning of the term "cache." A "cache" is a memory. More specifically, according to its plain **[**83]** meaning, a cache is a portion of memory that can be accessed quickly. See Novell's Encyclopedia of Networking 116 (1997).

b. "wherein said format sets are represented by bit strings, [and] wherein bit positions of said bit strings represent formats."

The definition of the term "bit" itself is undisputed. A "bit" is an abbreviation for a binary digit. That is, a character used to represent one of the two digits, **[*509]** '1' or '0,' in a numeration system with a base of two, and only two, possible states. However, certain other elements of the phrase "wherein said format sets are represented by bit strings, [and] wherein bit positions of said bit strings represent formats" are disputed by the parties.

Intel claims that the plain meaning of the phrase compels a finding that the meaning that each format set must be comprised of a series of 1's and 0's, where each individual bit

position in the bit string corresponds to a single format. Broadcom, while agreeing that the term "wherein said bit positions of said bit strings represent formats" requires a one-to-one correspondence between formats and bit positions, disagrees with Intel's construction to the extent that a bit string is **[**84]** a "series" which requires the use of more than one bit. Broadcom asserts that a bit string may be comprised of one single bit, and that the meaning of the term "bit string" should therefore be "one or more bits."

The specification explains that in the preferred embodiment, the format set of each node is represented by a "32 bit word." Each bit position corresponds to a particular format. Therefore, in this implementation, a "32 bit word" could contain information about 32 different formats. If a bit equals '1' (or true), the format set includes the format corresponding to the bit position. If a bit equals '0' (or false), the format set does not include the format corresponding to the bit position.

The specification also indicates, however, that "bit strings having less or more than 32 bit positions can also be used." Col. 3:64-66. To illustrate its point that a single bit could be used, Broadcom notes that a format set that includes only a default format could be represented by a single bit '0,' and a format set that includes both a default format and a supplemented format could be represented by a single bit '1.' However, in this example, the first bit position is used to indicate **[**85]** two different formats. While it is possible for a single bit to capture this information, the invention does not disclose such a system. Rather, according to the specification, "each bit position corresponds to a particular format." Thus, to accommodate two formats in the manner contemplated by the 830 patent with at least one default format and at least one supplemented format, as required by the invention, a bit string must contain two bit positions. Moreover, the language of claim 7 itself indicates that the strings have plural "bit positions."

Therefore the court declines to modify Intel's proposed definition of the term to allow the term bit string, as used in the patent, to be comprised of a single bit. The court finds that the phrase "wherein said format sets are represented by bit strings, [and] wherein bit positions of said bit strings represent formats" means that each format set must be represented by a series of 1's and 0's, where each individual bit position in the series of bits corresponds to a single format.

3. Construction of Claim 15

Claim 15 is an independent claim that, like claim 1, recites a "transfer format selection means." Claim 15, however, is directed **[**86]** to a "network interface." It is described using many of the same terms that are used to describe the "computer communication system" that is the focus of claim 1.

Claim 15 recites:

> 15. A network interface for interfacing a network having nodes and for supplementing the nodes of the network; said network interface comprising:
>
> (a) at least one supplemental format;
>
> (b) transfer format selection means for selecting a format for the transfer **[*510]** of data from a source node to a destination node;
>
> wherein said network is comprised of a communication medium and a plurality of nodes coupled to said communication medium for the transfer of data between nodes;

wherein said transfer of data is a transfer of data from a source node selected from said nodes to a destination node selected from said nodes;

wherein each of said nodes has a format set comprised of at least one default format common to each format set;

wherein said network interface is adapted to supplement a node selected from said nodes by adding said at least one supplemental format to the format set of said selected node;

wherein said transfer format selection means is adapted to select a format **[**87]** which is common to the format sets of the source node and destination node and which is compatible with said communication medium; and

wherein said formats are defined in terms of data architecture;

wherein said data architecture is defined in terms of at least one member of the group consisting of encoding, encryption, compression and protocol.

Col. 12:62-13:24.

Many of the terms that are used in claim 15 have been previously defined above in the context of claims 1 and 7. The meaning of those terms in claim 15 is identical their meaning in those claims as set forth above. The terms whose meaning has not yet been construed, which includes the preamble and a limiting wherein clause, are discussed below.

a. Preamble: "A network interface for interfacing with a network having nodes and for supplementing the nodes or the network, said network interface comprising:"

The parties dispute the meaning of the phrase, "a network interface for interfacing with a network having nodes and for supplementing the nodes or the network." This phrase is not technically an element of claim 15, because it is contained in the preamble to the claim. Intel states that the network interface **[**88]** of claim 15 is "the apparatus that carries out the function for connecting a node to the communication medium." Intel's Opening Br. at 29. Broadcom, however, contends that the plain language of the claim makes clear, that the network interface of claim 15 does not merely connect a new node to a network; rather, it "supplements" a node that is already connected to the network by "adding at least one supplemental format to the format set of that node."

Broadcom argues that this meaning is confirmed by the specification, which describes the supplemental interface of Figure 16, by explaining that "circuitry 31 and software 32 form a network interface which supplements a default node to form a supplemented node (previously a default node)." Col. 9:43-48. The specification further notes that "default nodes A and B can be altered by the addition of supplemented interface circuitry 31 and software 32 as described above and depicted in Figure 16. Nodes A and B then become supplemented nodes." Col. 9:21-29.

Intel contends that the preamble should not be read to limit the claims. See Apple Computer, Inc. v. Articulate Sys., Inc., 234 F.3d 14, 22 (Fed. Cir. 2000); Loctite Corp. v. Ultraseal Ltd., 781 F.2d 861, 868 (Fed. Cir. 1985). **[**89]** Language in a claim preamble acts as a limitation only when such language serves to "give meaning to a **[*511]** claim and properly define the invention," not when the preamble merely states a purpose or intended use of the invention. In re Paulsen, 30 F.3d 1475, 1479 (Fed. Cir.

1994) (quoting DeGeorge v. Bernier, 768 F.2d 1318, 1322 n.3 (Fed. Cir. 1985)). Intel asserts that the preamble of claim 15 simply states the intended use of a network interface: supplementing a node or nodes in a network.

Viewing the claims in light of the written description and in light of the language of claim 15 read as a whole, the court finds that the recitation in the preamble of claim 15 of "network interface for interfacing with a network having nodes and for supplementing the nodes of the network," standing alone, merely to states a purpose or intended use of the invention. Nothing in the preamble is necessary to define claim 15. Claim 15 is fully defined by its elements and the limiting wherein clauses which follow them.

The court finds that the preamble language reciting "[a] network interface for interfacing with a network having nodes and for supplementing the nodes **[**90]** of the network," is language of intended use and does not serve to limit the meaning of the claim. The court will address Broadcom's argument regarding the limitations of the wherein clause in the following section.

b. "wherein said network interface is adapted to supplement a node selected from said nodes by adding said at least one supplemented format to the format set of said selected node;"

Broadcom raises the same argument that the invention covered by claim 15 is limiting to the supplementing of nodes that are already connected to the network by the phrase "wherein said network interface is adapted to supplement a node selected from said nodes by adding at least one supplemented format to the format set of said selected node".

It is undisputed that the term "to supplement" means to augment or to add to. According to Merriam-Webster's 3d. New International Dictionary at 24 (1986), "adapted" means "suited by nature, character, or design to a particular use, purpose, or situation." In other words, something "is adapted to" a particular functionality when one of its uses could include that functionality. The court must determine whether the phrase "is adapted to supplement" **[**91]** is to be given its ordinary meaning or whether the phrase, as used in the claim, is more limited. The court finds that this language requires that the claimed network interface have the *capability* to augment a node; there is no requirement imposed by the "adapted to" language that requires a node actually to be supplemented by the network interface described in claim 15. See, e.g., Sealed Air Corp. v. Int. Packaging Sys., 1987 U.S. Dist. LEXIS 13230, 5 U.S.P.Q.2d. 1001, 1012 (E.D. Va. 1987) (claim reciting "reservoir adapted to hold material" does not require material actually be disposed within reservoir"); Elkay Mfg. Co. v. Ebco Mfg. Co., 1998 U.S. Dist. LEXIS 10697, No. 93 C 5106, 1998 WL 397844 at *13-14 (N.D. Ill. July 13, 1998) (construing claim language "removable mounting means adapted to fit on cabinet" as covering any device with removable mounting means that is capable of fitting on cabinet) rev'd on other grounds, 192 F.3d 973 (Fed. Cir. 1999).

The court also finds that the second part of the disputed phrase, "to supplement a node selected from said nodes by adding said at least one supplemented format to the format set of said selected node, **[**92]** " limits claim 15 to apply to nodes that are or were already connected to the network. This interpretation is supported by a plain reading of the claim language. The "said **[*512]** nodes" from which the network interface "is adapted to supplement a node . . . by adding said at least one supplemented format to [its] the format set" are defined in an earlier wherein clause in claim 15 that states "wherein said network is comprised of a communication medium and a plurality of nodes coupled to said communication medium for the transfer of data between nodes." Each reference in the claim thereafter that refers to "said nodes" refer to the plurality of nodes that are coupled to the communication medium (i.e. nodes connected to the network). A node that is selected from that set of nodes therefore must be limited to that set of

nodes.

This interpretation of the claim language is supported by the both embodiments of the invention of claim 15, found in Figures 16 and Figure 17. First, the specification describes how existing nodes on the network can be altered to "become supplemented nodes" by adding the supplemental interface circuitry and software depicted Figure 16. Col. 10:66. Second, the specification **[**93]** indicates that nodes can also be supplemented by adding autonomous supplemental network interface circuitry in the form of a network card that is plugged into the backplane of a computer device and then connected to the network. The network card then interfaces with the network, which is represented in both examples by cable 1. The specification later notes that "nodes [] supplemented by supplemental interfaces including the circuitry and software of Fig. 17 . . . can be coupled to cable 1 as supplemented nodes." Col. 10:66-11:2.

In sum, the two embodiments disclosed in Fig. 16 and Fig. 17 indicate that an interface is "adapted to supplement" if its use can create a supplemented node. The court further finds that the phrase "a node selected from said nodes by adding said at least one supplemented format to the format set of said selected node" includes supplementing, by adding at least one supplemented format to the format set of, an existing node, or supplementing, by adding at least one supplemented format to the format set of, a previously connected networked node that is subsequently re-connected to the network through the claimed network interface card.

4. Construction **[**94]** of Claim 18

Claim 18 modifies claim 15 in a manner similar to that in which claim 7 modifies claim 1. It further focuses on the "string of bits' that is to be used to represent formats is the scheme described in claim 15. Claim 18 depends on claim 17, which in turn depends on claim 16, which in turn depends on claim 15. Incorporating each of these dependencies, claim 18 recites:

> A network interface in accordance with claim 15 wherein said transfer format selection means is comprised of a source node cache for node format sets; and wherein transfer format selection is made by the source node by searching for the destination node format set in said source node cache and by selecting a format which is included in said destination node format set and the source node format set, wherein said format sets are represented by bit strings, [and] wherein bit positions of said bit strings represent formats.

Col. 13:25-38.

All of the terms that are used in claim 18 have all been previously defined above in the context of claims 1, 7, and 15. The meaning of those terms in claim 18 is identical their meaning in those claims as set forth above.

III. CONCLUSION

The following **[**95]** table is intended to summarize the court's claim construction findings for the parties' convenience.

Claim 1

A communication medium	The term communication medium means a collection of connections (generally links between nodes) in a communication system over which information may be transmitted.
a plurality of nodes coupled to said communication medium for a transfer of data between said nodes; wherein said transfer of data is a transfer of data from a source node selected from said nodes to a destination node selected from said nodes	The term node means any data processing device, including, but not limited to, a computer, a file server, a bridge, a gateway, a co-processor, modem server, memory, or printer, that includes a network interface, through which it is coupled to the communication medium. The term data means any thing passed between nodes that conveys meaning.
transfer format selection means for selecting a format for the transfer of data from said source node to said destination node . . . wherein said transfer format selection means is adapted to select a format which is common to the format sets of the source node and destination node and which is compatible with said communication medium	This claim element is drafted in means-plus-function format. The claimed function is selecting a format for the transfer of data from said source node to said destination node, which is common to the format sets of the source node and the destination node and which is compatible with said communication medium. The corresponding structure is (1) a bit string representation of the destination node's supported format set; (2) that is retrieved in accordance with an algorithm disclosed in Figure 4 that first searches the source node's associated memory, and then, if necessary, conducts an inquiry dialog; and (3) any circuitry configuration or any software programmed to execute an algorithm that first uses the bit string representation of the destination node's supported format set to determine which transfer formats are common to the transfer format sets of the source node and the destination node and compatible with the communication medium and

	then selects one transfer format from those common transfer formats to use in ransmitting the information to the destination node.
wherein said plurality of nodes is comprised of at least one default node and at least two supplemented nodes	The term plurality, standing alone, means at least two. However, the plurality of nodes referred to in the claims is limited by the wherein clause that describes that the plurality must be "comprised of' at least one default node and at least two supplemented nodes. Therefore, as used in claim 1, the term "plurality" requires at least three nodes. The term default node is a node coupled to the communication medium which can transfer data over the network only in the default format or default formats. The term supplemented node is a node coupled to the communication medium which can transfer data over the network in the default format or default formats and which can also transfer data over the network in one or more supplemental formats.
wherein each of said nodes has a format set comprised of one or more formats	The term format sets means a collection of individual formats for a node consisting of at least one format. The term format is a data transmission characteristics that is defined in terms of "data architecture" and/or the "rate of data transmission."
wherein said formats are defined in terms of data architecture	Data architecture means one or more of the following data transmission characteristics: encoding, encryption, compression, and protocol.
wherein said data architecture is defined in terms of at least one member of a group consisting of encoding, encryption, compression and protocol	1) "Encoding" means the waveform pattern or other waveform representation of data bits used for transmission of data on the communication medium. 2)"Encryption" means the organization and arrangement of data into a

	nonintelligible form for transmission. 3) "Compression" means the representation of data in a shorter form which requires fewer bits to represent the data. 4) "Protocol" means the convention used for data transmission which defines frame organization and content including command codes for the protocol handler of the destination node.
wherein each of said format sets includes at least one default format	The term default format means a common format that every node coupled to the communication medium can use to transfer data to every other node coupled to that medium.
wherein said at least one default format is included in the format sets of each of said nodes	-
wherein the format set of each of said supplemented nodes includes at least one supplemental format in addition to said at least one default format	The term supplemental format means an additional format, distinct from the default format, that is not common to all nodes coupled to the network.
Claim 7 A computer communication system in accordance with claim 6 wherein bit positions of said bit strings represent formats	The term cache (used in claim 6) means memory. The phrase "wherein said format sets are represented by bit strings, [and] wherein bit positions of said bit strings represent formats" means that each format set must be represented by bit strings must be comprised of a series (plural) of 1's and 0's, where each individual bit position in the series of bits corresponds to a single format.
Claim 15 A network interface for interfacing with a network having nodes and for supplementing the nodes of the network, said network interface comprising	-
wherein said network interface is adapted to supplement a node selected from said nodes by adding said at least one supplemental format to the format set of said selected node	The phrase "adapted to supplement" means that the claimed network interface have the capability to augment a node. The phrase "a node selected from said nodes by adding said at least one

supplemented format to the format set of said selected node" means supplementing, by adding at least one supplemented format to the format set of, an existing node, or supplementing, by adding at least one supplemented format to the format set of, a previously connected networked node that is subsequently re-connected to the network through the claimed network interface card.

Claim 17
A network interface in accordance with claim 16 wherein said format sets are represented by bit strings.
[96]**

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Firms battle over IP, talent

Intel Corp., Santa Clara, Calif., last week filed a patent infringement case against Broadcom Corp., claiming that the Irvine, Calif.-based communications chip company unlawfully used its technology in products ranging from ADSL to semiconductor packaging, to video compression and decompression.

Intel, playing the role of the entrenched semiconductor giant, has been battling the young upstart Broadcom on several fronts recently. The animosity between the two companies is vaguely reminiscent of when Intel played the young upstart in the 1970s and moved to lure talent and technology away from the old, disorganized Fairchild Semiconductor. Despite the parallels, a Broadcom spokesman said the company was confident in the soundness of its business practices and will defend itself vigorously against the claims in the suit.

Intel is seeking an injunction preventing further infringement, plus financial damages and legal costs.

An Intel spokesman said the company usually seeks to negotiate cross-licensing agreements for patent claims before pursuing legal recourse. However, based on a trade-secret theft claim now pending in court, Broadcom behaved in a cavalier fashion toward Intel's intellectual property (IP), the spokesman said. That prompted Intel to skip the negotiation stage and to proceed with a suit filed in U.S. District Court in Delaware.

In the March litigation preceding the latest filing, Intel claimed that Broadcom tried to steal its trade secrets by luring its employees away. Intel produced evidence at a hearing, claiming Broadcom interviewed an Intel employee for four hours and never once asked that person about previous work history, job performance, salary or benefits. Instead Broadcom officials allegedly grilled the Intel employee on trade secrets. Intel claimed the employee returned to his office after the interview and e-mailed Broadcom more trade secrets from his workstation.

Based on the evidence at that hearing, Intel was granted a temporary restraining order and a court injunction barring Broadcom from talking to its employees.

Intel's latest suit goes directly to the core of the animosity between the two companies.

"The violations of Intel's technology rights described below appear to be part of a carefully crafted plan to build Broadcom's business using Intel's technology," Intel stated in the complaint.

An Intel spokesman said that the details of the specific patent it claims Broadcom misappropriated will be made more clear during the discovery process and at evidentiary hearings.

Intel is seeking an injunction preventing further infringement, plus financial damages and legal costs. Of the patents in question, Nos. 4,823,201, 5,079,630 and 5,134,478 concern video compression and decompression, which enable video and audio to be moved across networks. Patent No. **5,894,410** regards chip packaging and patent No. 4,975,830 - DSL technology.

"We looked at our patent portfolio and their product portfolio and decided there were some issues of patent infringement there," a spokesman said. "We usually use litigation as a last resort in these cases but based on Broadcom's behavior with our trade secrets, we believe that they have no respect for our intellectual property."

Intel is not too far ahead of Broadcom in regard to MPEG-2 video compression technology, said Jay Srivatsa, consumer electronics analyst at market research firm GartnerGroup Inc.'s Dataquest unit. In other words Srivatsa was surprised Intel went after Broadcom on that patent and believes the real reason may lie in Intel's set-top box woes and Broadcom's set-top box success. Intel, as an early investor in Broadcom, may have asked for help in its efforts. However, Broadcom may have declined because it has grown so dramatically and may not feel beholden to Intel.

On a competitive basis, Broadcom's fortunes are rising, as a company playing in the network communications IC market. Broadcom has been on an acquisition spree, recently picking up communications processor company Silicon Spice for $ 1.2 billion.

Intel itself has been pushing aggressively to become a chip vendor to the network communications space. The PC microprocessor powerhouse sees considerable opportunity to become a leading provider of merchant silicon to network equipment builders and has been on its own acquisition spree over the last year.

"It's an indication that Intel is starting to get as serious about the communications space as it is about the PC space," said Linley Gwennap, principal analyst with The Linley Group. "In key markets, Broadcom is Intel's biggest competitor. It's almost flattering that Intel has singled it out."

Alex Romanelli, ENews web editor, contributed to this report.

IAC-CREATE-DATE: October 5, 2000

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Delaware Corporate Litigation Reporter September 18, 2000

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Delaware Corporate Litigation Reporter

September 18, 2000

SECTION: Vol. 14; No. 22; Pg. 8

LENGTH: 341 words

CASE: Patents: Intel Corp. v. Broadcom Corp.

HEADLINE: Intel Accuses Broadcom Of Infringing Numerous Patents

BODY:
Intel Corp. has expanded its legal war with competitor Broadcom Corp. by filing a patent infringement lawsuit against the company in Delaware federal court, months after hitting it with a trade secret misappropriation complaint in California. Intel Corp. v. Broadcom Corp., No. 1:00cv00796, complaint filed (D. Del., Aug. 31, 2000). "Nearly every aspect of Broadcom's business -- cable products, high-speed networking products, even semiconductor package configurations -- violates one or more Intel patents," the patent infringement complaint states.

According to the complaint, Broadcom's business strategy has been based on acquiring access to proprietary Intel technology, the plaintiff asserts. Intel previously filed a trade secret misappropriation suit against Broadcom in California Superior Court, where a judge entered a temporary restraining order against Broadcom. According to Intel, Broadcom violated the order and is now under the eye of an independent court-appointed monitor.

Now, Intel asserts, Broadcom is willfully violating five Intel patents:

--

U.S. Patent No. 4,975,830, "Computer Communication System Having Supplemental Formats";

--

U.S. Patent No. **5,894,410,** "Perimeter Matrix Ball Grid Array Circuit Package with a Populated Center";

--

U.S. Patent No. 5,134,478, "Method and Apparatus for Compressing and Decompressing a Digital Video Signal Using Predicted and Error Images";

--

U.S. Patent No. 5,079,630, "Adaptive Video Compression System"; and

--

U.S. Patent No. 4,823,201, "Processor for Expanding a Compressed Video Signal."

The complaint seeks injunctive relief, damages, including enhanced damages, for infringement, and costs and attorneys' fees.

Intel is represented by William J. Marsden of Fish & Richardson in Wilmington, Del.; John E. Gartman of San Diego; and Peter Detkin and Janet Craycroft of Intel Corp. in Santa Clara, Calif.

(Call 877-595-0449 for the eight-page complaint.)

LOAD-DATE: October 18, 2000

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5,894,410 OR 5894410 Search

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1. Intellectual Property Today, January, 2001, RFC EXPRESS TM; Recently Filed Patent Cases; Pg. 36, 2300 words

2. Intellectual Property Today, November, 2000, RFC EXPRESS TM; Pg. 24, 2670 words, RECENTLY FILED PATENT CASES

3. Delaware Corporate Litigation Reporter, September 18, 2000, Vol. 14; No. 22; Pg. 8, 341 words, Patents: Intel Corp. v. Broadcom Corp., Intel Accuses Broadcom Of Infringing Numerous Patents

4. Computer & Online Industry Litigation Reporter, September 12, 2000, Vol. 17; No. 24; Pg. 10, 340 words, Patents:Intel Corp. v. Broadcom Corp., Intel Accuses Broadcom Of Infringing Numerous Patents

5. Electronic News (1991), September 4, 2000, No. 36, Vol. 46; Pg. 2 ; ISSN: 1061-6624, 801 words, Intel Tries to Clip Broadcom's Wings; Company Business and Marketing, Murphy, Tom

6. Electronic News, September 4, 2000, NEWS; Pg. 2, 792 words, Intel Tries to Clip Broadcom's Wings; Firms battle over IP, talent, Tom Murphy

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Intellectual Property Today January, 2001

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January, 2001

SECTION: RFC EXPRESS TM; Recently Filed Patent Cases; Pg. 36

LENGTH: 2300 words

BODY:
... 5,502,719-370/412

00-8371 -- Filed: 001101
BRISTOL-MYERS SQUIBB & ASTRA MEDICA
vs.
GENSIA SICOR PHARMACEUTICALS & SICOR INC.

00-3702 -- Filed: 001010
BROADCOM CORP.
vs.
INTEL CORP.
5,894,410-361/760; 4,975,830-709/228;
5,134,478-375/240.12; 4,823,201-375/240.08;
5,079,630-375/240.08

00-5340 -- Filed: 001026
BROTHER IND. LTD. & BROTHERS INT'L CORP.
vs.
KROY ...

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Intellectual Property Today November, 2000

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November, 2000

SECTION: RFC EXPRESS TM; Pg. 24

LENGTH: 2670 words

HEADLINE: RECENTLY FILED PATENT CASES

BODY:
... 702/19

00-20877 -- Filed:000817
INCYTE GENOMICS INC.
vs.
AFFYMETRIX INC.
6,023,659-702/19

00-796 -- Filed:000830
INTEL CORP.
vs.
BROADCOM CORP.
4,975,830-364/200; **5,894,410**-361/760; 5,134,478-358/136; 5,079,630-358/133;
4,823,201-358/133

00-1267 -- Filed:000728
INTELLECTUAL PROPERTY DEVELOPMENT INC., ET AL
vs.
TCI CABLEVISION OF WASHINGTON INC., ...

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